

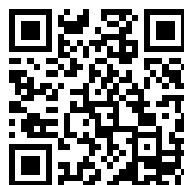


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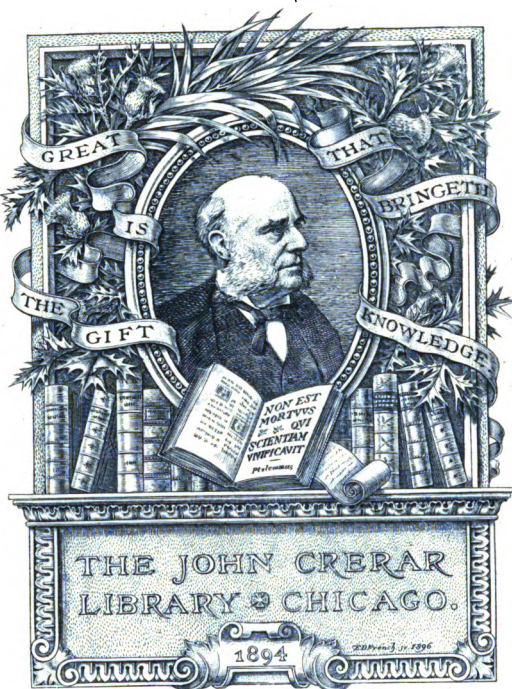
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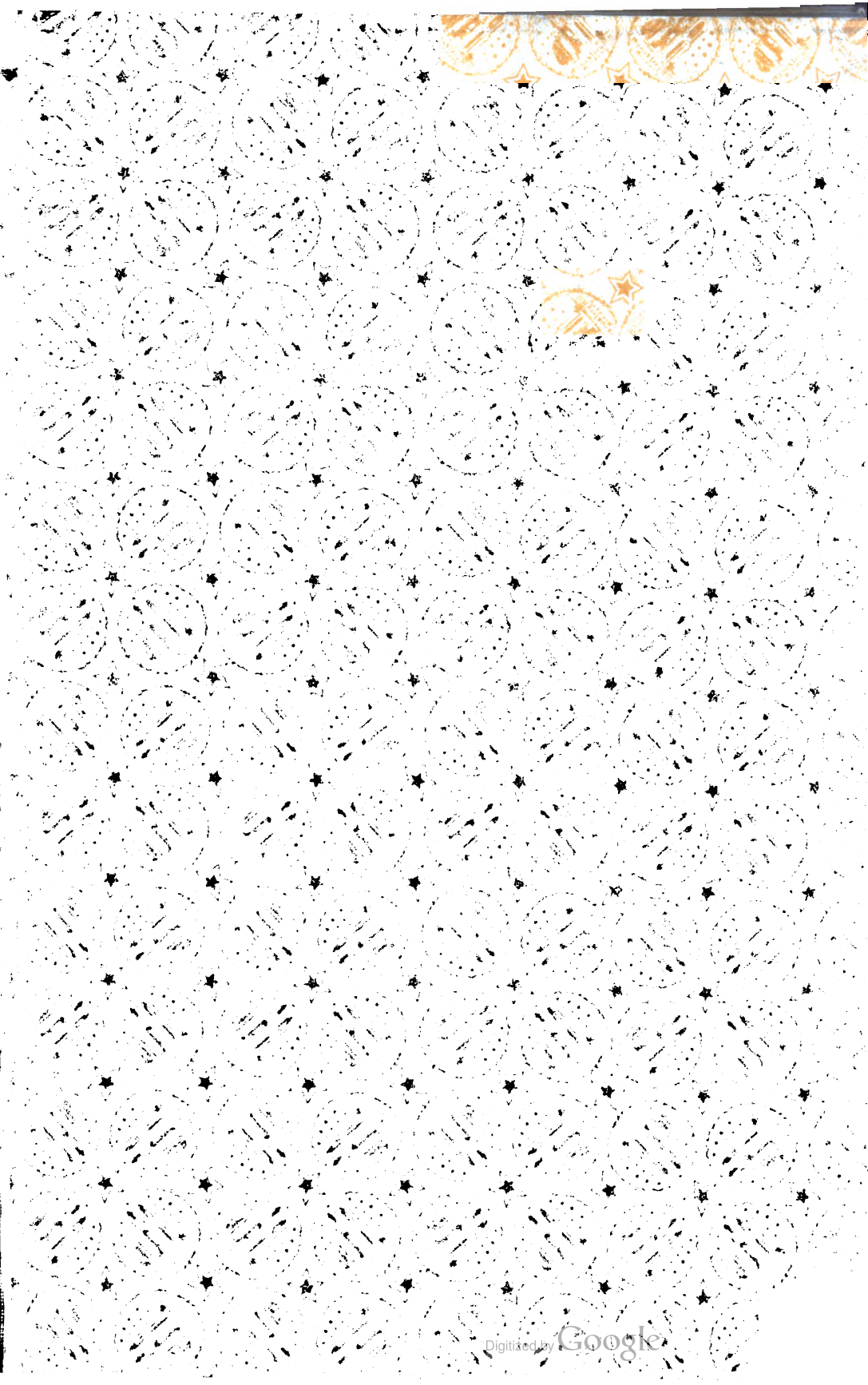






PRESENTED BY

*Dr. H. E. Horton*











THE  
CREAMERY PACKAGE  
MFG. COMPANY



GENERAL CATALOG  
350

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General Catalog  
of  
The Creamery Package  
Mfg. Company

No. 350

Comprising a Complete Line of Apparatus and Supplies for  
Creameries, Cheese Factories, Milk Deal-  
ers, Dairymen and Ice Cream Makers,  
Refrigerating and Ice-Making Ma-  
chinery, Egg Cases and Fillers

*Published 1912*

By  
The Creamery Package Mfg. Company

GENERAL OFFICES

61-67 West Kinzie Street  
Chicago, Illinois

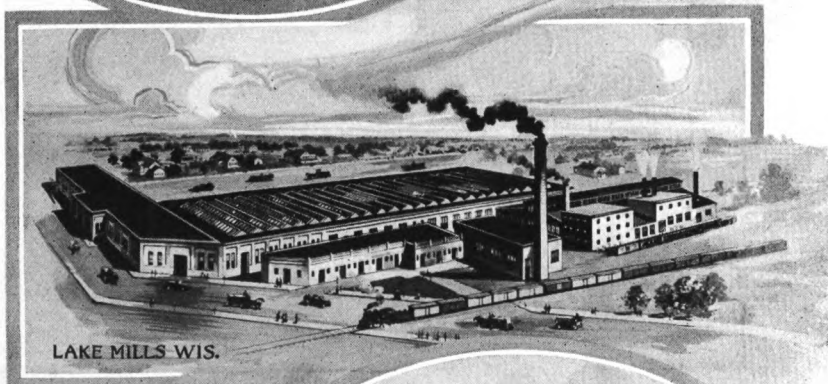
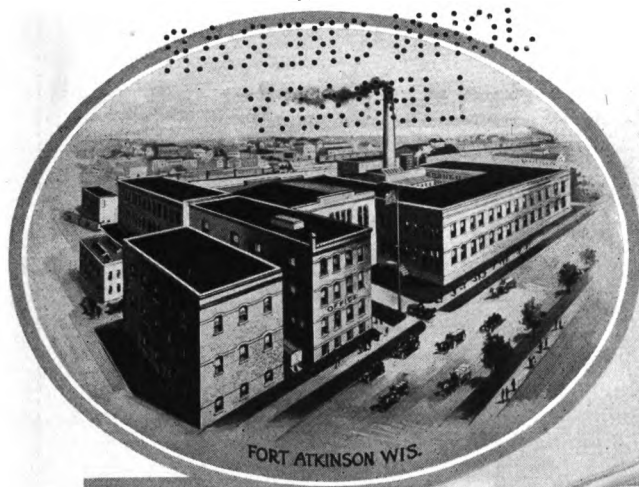
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406-408 Sycamore Street, Waterloo, Iowa

113-117 South Tenth Street, Omaha, Neb.  
322-324 Broadway, Albany, New York  
1907 Market Street, Philadelphia, Pa.

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## Our Apparatus Factories





## To Our Customers and Prospective Customers

Doubtless the majority of those who receive this catalog are customers of ours or at least are in a measure acquainted with us and the nature and scope of our business and its connection with the dairy industry.

But it will undoubtedly fall into the hands of many others who have never dealt with us, and while they may have a knowledge in a general way as to what we deal in and what we do, it may not be out of place to give them an outline.

This book is a catalog of our line of dairy goods and comprises all necessary equipment and supplies to produce milk, to manufacture it into any of the principal and standard dairy products. We have endeavored to make the descriptions as clear as possible in the space allowed so that anyone who wants equipment and supplies for any dairy purposes can select such as will be most suitable under the conditions that obtain in the case under consideration.

It is, of course, not possible to go into every minute detail regarding the construction and operation of each appliance. We show equipment for making practically all standard dairy products and packages for marketing them and, to give all the details about every article, though it might be interesting and valuable to many of our customers, would carry us far beyond the usual scope of a commercial catalog and if carried to the end would practically mean the publication of all that is known on the subject of practical dairy production, manufacturing and marketing, inasmuch as carrying out of any process involves the use of one or more appliances such as we list here.

## The Quality of Our Goods

As we are manufacturers and inventors, as well as dealers, we are in position to know and control the quality of our goods. We seek to make the best and sell it at a fair price. We do not rely on low prices to attract business but rather upon quality and service. Considering the quality, our prices are low. They may not be cheapest to buy, but they will, we are confident, be found cheapest to use. In comparing prices always compare quality. We have built up an immense business furnishing creameries, cheese factories and milk plants with equipment and supplies, which is in itself the best evidence of the reliability of our goods as well as assurance, if any is needed, of our standing as a dairy supply house.

## Our Guarantee

Our guarantee goes with every article sold. If not as represented, we shall cheerfully refund your money upon return of the goods.

We solicit correspondence regarding equipment and supplies for any branch of dairying. Our broad experience qualifies us to advise intelligently regarding any point upon which you are in doubt or wish information.

The Creamery Package Mfg. Co.

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R-03

## Notice

In ordering, always give **Full Name, Post Office Address, Railroad Station, County and State**, and whether to be shipped by **Freight, Express or Mail**. We will not be responsible for loss of goods ordered shipped by mail.

To be sure of getting the article you want, always state plainly just what is wanted, giving the same name as used in this catalog, size or number, quantity wanted, and refer to catalog page on which the article desired is listed.

Avoid ordering goods "same as last."

All goods are delivered to the railroad and express companies in good order, and we cannot be responsible for their condition thereafter. **We would urge upon you the necessity of examining** all goods before receipting for same, and if damaged, note same on carrier's receipt. With these precautions taken, damages can be collected.

When persons ordering goods are unknown to us, or their rating is not given by the mercantile agencies, the order should be accompanied by cash or references as to financial standing. We cannot ship goods C. O. D. unless enough money is advanced on them to pay transportation charges both ways. In remitting, please do so by postal note, express order or draft on Chicago or New York.

**RETURNED GOODS** We do not allow goods to be returned unless special arrangement is made relative thereto. We cannot assure our customers that their accounts will receive proper credit for returned goods, unless the following instructions are strictly followed:

Goods must be marked plainly, both with our name and the shipper's.

On date of making shipment, we must be notified by mail regarding same, giving full list of goods returned, and stating in care of what transportation company shipment was made. If by freight, enclose shipping receipt.

**All specifications and prices given herein are subject to change without notice.**  
**Write for our monthly price current or quotation.**

## Terms

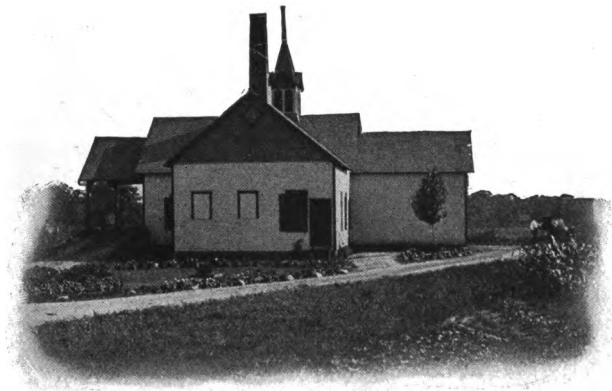
30 days, net cash; 1 per cent discount in 10 days.

If ordering of us for first time, send us name of some one in this city with whom you are dealing.

Yours respectfully,

**CREAMERY PACKAGE MFG. COMPANY.**

## Building Creameries



Every farming community in which there is a sufficient number of cows should by all means have a creamery established, either by the farmers themselves combining and establishing a co-operative creamery, by interesting local business men in a stock company, or by some individual building and operating the creamery as a private enterprise.

Experience has shown that a creamery can be made a success when there are 300 cows within a radius of three miles of the point at which the creamery is to be built. When this number of milch cows is available and a creamery is built and properly managed it is usually but a short time until the number is largely increased and the business firmly established.

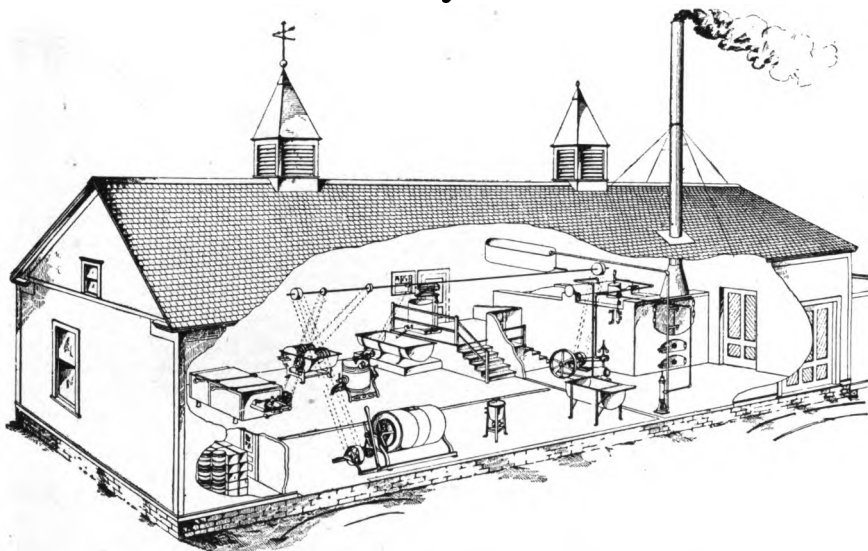
The question of the cost of a creamery is asked us many times. It is as difficult to answer exactly as to give off-hand the cost of a house. The cost depends upon the number of cows butter is to be made from, and the style and capacity of machinery as well as the cost of building which is governed entirely by local conditions. From \$1200 to \$2000 will ordinarily build a first class building.

The machinery for making butter from 300 to 500 cows, including 15 H. P. Steel Boiler, Balance Valve Engine, Alpha Separator of 3,500 (lbs.) capacity, Victor Combined Churn and Worker, Ideal Skim-milk Weigher, Twentieth Century Milk Heater, Vats, Wizard Babcock Milk Tester and such other apparatus as is necessary will cost from \$1,800 to \$3,000.

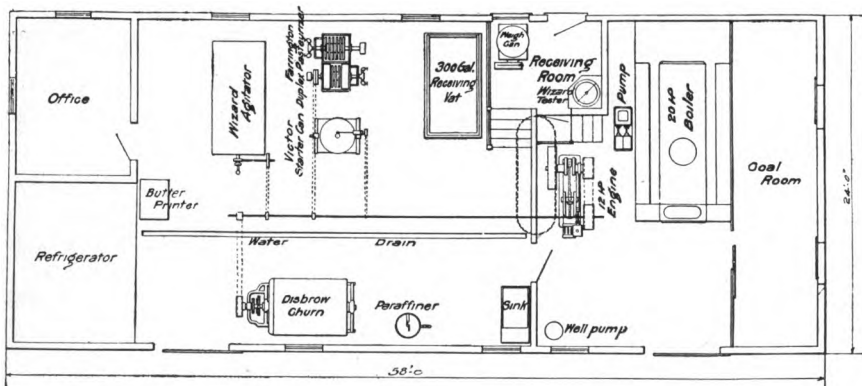
The figures given above will enable any one to make plans with safety. As stated before the cost will vary greatly owing to local conditions and the capacity.

We shall be pleased to furnish plans of buildings, and complete list of machinery to suit individual need, on application.

## Creamery Plans



The above cut shows a creamery built on our plan No. 9, ground plan of which is shown below. We can recommend it for neatness, convenience, and economy of space and cost.



The accompanying cut shows ground plan of an up-to-date creamery capable of making from 500 to 1,000 lbs. of butter per day. This plan has been devised after careful study of the subject, and from long experience we feel warranted in the assertion that for convenience in working and economy of space and cost it could not be materially improved upon, and it has been adopted by many of our customers.

This plan shows the latest and most approved machinery for the manufacture of fine butter in the most economical manner.

Of course, the arrangement of the machinery may be changed from right to left as the situation would make most convenient. Space for a refrigerating machine is easily provided by lengthening the building a few feet. We have other plans of Creameries and Skimming Stations, and we furnish to our customers detail plans and specifications for use in building their creamery.

# Specimen Outfit List

For 300 to 500 Cow Creamery on Whole Milk Plan.

- |  |  |
|--|--|
| <p>1 20-H. P. Half or Full Arch front tubular boiler, complete with stack.</p> <p>1 Boiler Feed Pump and Heater, or Injector, as desired.</p> <p>1 12 to 15 H. P. Horizontal Engine, including Sight Feed Lubricator.</p> <p>1 Bbl. Fire Clay. 400 Fire Brick.</p> <p>2 No. 1 Sanitary Whole and Skimmed Milk Pumps.</p> <p>1 3,500 lbs. capacity No. 1 Alpha Belt Separator.</p> <p>1 20th Century Milk Heater.</p> <p>1 60-gal. Weigh Can with 3-in. Perfection Gate.</p> <p>1 400-gal. Milk Receiving Vat.</p> <p>1 300-gal. Wizard Combined Pasteurizer and Ripener.</p> <p>1 No. 4 Dual or No. C Victor Churn.</p> <p>1 Northey or Bohn Refrigerator.</p> <p>1 Victor Starter Can.</p> <p>1 Portable Wash Sink, galvanized lined.</p> <p>1 Vat Strainer.</p> <p>1 Disbrow Churn Strainer.</p> <p>1 24-bottle Wizard Turbine Tester, complete.</p> <p>1 Conductor Head.</p> <p>6 Feet Conductor Pipe.</p> <p>1 200-gal. Galvanized Steel Skimmed Milk Tank.</p> <p>1 300-gal. Galvanized Steel Buttermilk Tank.</p> <p>1 Ideal Skimmed Milk Weigher.</p> <p>1 Victor Pasteurizer with Oil Trap.</p> <p>1 Noiseless or Penberthy Water Heater.</p> <p>1 Buttermilk Strainer.</p> <p>1 14-in. or 17-in. Iron Head Mop.</p> <p>1 50 to 250 Patron Elgin Milk Ledger.</p> <p>1 Eureka Check Register.</p> <p>1 Dozen Weekly, Monthly, or semi-monthly Milk Sheets.</p> <p>1 Newton Computator.</p> <p>1 Ideal Test Measure (Composite).</p> <p>1 Babcock Test Bottle Brush.</p> <p>6 Composite Test Jar Brushes.</p> <p>25 or more <math>\frac{1}{2}</math>-pt. or pint Composite Test Jars with Lightning tin top.</p> <p>1 18-in. to 24-in. Butter Trier.</p> <p>1 Ames or Farrington Moisture Test.</p> <p>1 C. P. Salt Test.</p> <p>1 8-oz. Graduate (for butter color).</p> | <p>6 Common or Large Floating Thermometers.</p> <p>1 Butter Packer.</p> <p>1 Dairy or New York Style Ladle.</p> <p>1 Factory Ladle.</p> <p>1 Acme or Challenge Butter Printer.</p> <p>1 Canvas Apron (light or heavy).</p> <p>1 600-lb. Double Beam Platform Scale.</p> <p>1 Butter Salting Scale.</p> <p>Necessary C. P. Sanitary Pipe and Fittings for connecting receiving vat, heater and separator.</p> <p>5 12x1 11-16-in. Adjustable Drop Hangers.</p> <p>4 1 11-16 Shaft Collars.</p> <p>20 ft. 1 11-16 Main Shafting.</p> <p>10 ft. 1 11-16 Countershafting.</p> <p>20 ft. <math>\frac{3}{4}</math>-in. 4-ply Steam Hose.</p> <p>30 ft. <math>\frac{3}{4}</math>-in. 3-ply Conducting Hose.</p> <p>1 Belt Awl.</p> <p>100 ft. Cut Rawhide Lacing.</p> <p>5 lbs. Italian Hemp Packing.</p> <p>1 lb. each Piston and Cylinder Packing.</p> <p>1 Spiral Engineers' Favorite or Steam Flue Cleaner.</p> <p>1 Coal Scoop.</p> <p>1 Poker.</p> <p>1 Enterprise or Malleable Pipe Vise.</p> <p>1 Barnes, Stanwood or Saunders Pipe Cutter.</p> <p>2 Stillson, Trimo, or B. &amp; C. Pipe Wrenches.</p> <p>1 Coe or Alligator Wrench.</p> <p>1 Zinc, Steel or Brass Oiler.</p> <p>1 Well Pump, pulley or steam style as desired, with necessary pipe rod and cylinder.</p> <p>Necessary connection and exhaust pipe (black iron or galvanized), for boiler, engine, pumps, wash sink and buttermilk vats, etc., with fittings and valves.</p> <p>1 Main Drive Wood Split Pulley.</p> <p>1 Main Shaft Wood Split Pulley.</p> <p>1 Counter Shaft with Wood Split Pulley.</p> <p>2 Small Pumps Wood Split Pulley.</p> <p>1 Well Pump Wood Split Pulley.</p> <p>1 Churn and Worker Split Pulley.</p> <p>1 Separator Split Pulley.</p> <p>1 Refrigerating Plant.</p> |
|--|--|

The above is a general list for creamery, and is altered to suit needs of purchaser, and demands of location and building specifications. It is intended to give a general idea of apparatus necessary to operate on the whole milk plan, and will be completed and thoroughly itemized on application. For gathered cream plants the separator, heater, etc., are not required. Write us for full particulars, plans, specifications and estimates.



# List of Apparatus and Supplies for Cheese Factory

To make Full Cream Cheese from the Milk of 500 to 800 Cows

## Machinery

- |  |  |
|--|--|
| 1 8-H. P. Economist Boiler, complete with all fittings.          | 1 Set Milk Can Hooks, cross bar, and 25 ft. $\frac{3}{4}$ -in. rope.                           |
| 1 5-Beam 600-lb. Scale, with or without wheels.                  | 1 Speed Knife.   |
| 1 $\frac{1}{2}$ -oz.x240-lb. S. B. Tin Scoop Common Union Scale. | 1 24-Bottle Wizard Turbine Tester, complete.   |
| 1 80-gal. Weigh Can.   | 1 Doz. Monthly Milk Sheets.  |
| 1 Light or Heavy Conductor Head and 10 feet of trough.           | 1 20th Century Cheese Box Machine, 15-in. drum and table.                                      |
| 2 600-gal. Up-to-date Channel Bottom Cheese Vats.                | 1 Hygrometer.  |
| 1 10-ft. Curd Sink.  | 1 No. 3 Injector.  |
| 1 Victor Curd Mill.  | 1 Victor Paraffining Tank.   |
| 1 Steel Frame Gang Cheese Press.                                 | 1 Marschall Rennet Test.   |
| 15 15-in. x 7-in. Tinned Gang Press Hoops.                       | 2 Flat-sided Curd Pails.   |
| 1 8-in.x22-in. Horizontal Curd Knife.                            | 1 Wisconsin Curd Test.   |
| 1 14-in. blade x 22-in. Perpendicular Curd Knife.                | 25 lbs. Phospho.   |
| 1 Long-handled Gallon Dipper.                                    | 1 Curd Rake.   |
| 1 Short-handled Gallon Dipper.                                   | 1 Cheese Box and Self-Scraper with $2\frac{1}{2}$ -in. cutter.                                 |
| 1 Strainer Dipper.   | Steam heating coils for curing room, with all necessary connecting pipes, valves and fittings. |
| 1 Plain Siphon.  | 90 ft. $\frac{3}{4}$ -in. Steam Pipe.  |
| 1 Half-round Channel Bottom Whey Strainer, with spout.           | 10 $\frac{3}{4}$ -in. Elbows.  |
| 2 Tin Curd Scoops.   | 6 $\frac{3}{4}$ -in. Couplings.  |
| 2 8-oz. Glass Graduates.   | 5 $\frac{3}{4}$ -in. J. D. Globe Valves.   |
| 1 6-in.x $\frac{5}{8}$ -in. Cheese Trier, flat handle.           | 1 $\frac{3}{4}$ -in. J. D. Check Valve.  |
| 1 Tinned Cheese Knife.   | 1 Coal Scoop.  |
| 1 Set Months and Dates.  | 1 Poker.   |
| 2 14-in. Wood-head Mops.   | 3 Brushes.   |
| 1 Combined Floor Brush and Mop.                                  | 2 $2\frac{1}{2}$ x $2\frac{1}{2}$ x 8-ft. Galvanized Steel Whey Tanks.                         |
| 1 Set Test Instruments with Quevennes Lactometer.                | 1 Barber-Colman Check Pump.  |
| 6 10-in. Flange or Floating Thermometers.                        | 1 $1\frac{1}{2}$ -in. Blakeslee Steam Jet Pump with pipe and connections for same.             |
|  | 1 Office Desk.   |
|  | 1 Office Chair.  |

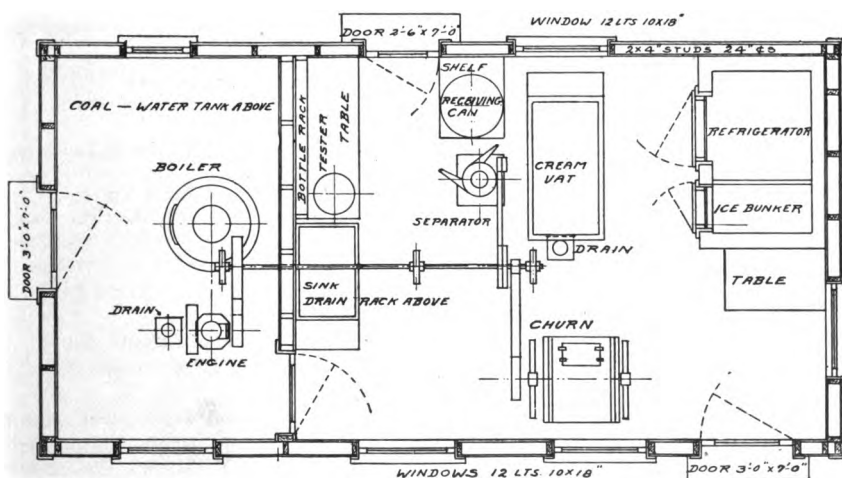
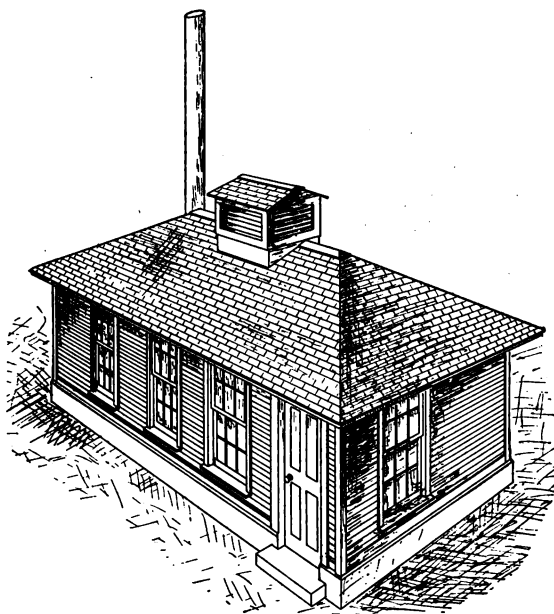
## Supplies

- |  |                                     |
|--|-------------------------------------|
| 5 $\frac{1}{2}$ yds. 76-in. Strainer Cloth.                    | 2 Gallons Hansen's Cheese Color.    |
| 1,000 14 $\frac{1}{2}$ -in. x 10-in. Taper Excelsior Bandages. | 1 60-patron Roe Cheese Fact'y Bock. |
| 1,000 14-in. Cloth Circles.                                    | 1 Bundle Scale Boards (whitewood).  |
| 8 Gallons Hansen's Rennet Extract in bottles.                  | 100 Sets 15x8-in. Cheese Box Stock. |
|  | 50 15-in. Press Cloth Circles.      |
|  | 5 Bbls. Cadillac Cheese Salt.       |

## Cans

- |                         |                          |
|-------------------------|--------------------------|
| 15 20-gallon Hodo Cans. | 15 20-gallon Union Cans. |
| 25 30 " " "             | 25 39 " " "              |

## Farm Dairy House For Butter Making



The building above shown in perspective and floor plan is sufficient to house the equipment and carry on the operations of making butter from 20 to 60 cows. The arrangement of the apparatus permits of the work being done with the minimum of labor. The equipment is strictly high grade, and a farm dairy along these lines is assured of high quality product and good prices. See page 12 for list of equipment.

# Farm Dairy Outfits

## For Making Butter From 20 to 60 Cows

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1 3 H. P. Vertical Boiler.</li> <li>1 2 H. P. Vertical Engine.</li> <li>1 De Laval Cream Separator, capacity according to requirements.</li> <li>1 60-gallon Weigh Can.</li> <li>1 50-gallon Cream Ripening Vat.</li> <li>1 12-bottle 20th Century Babcock Milk Tester.</li> <li>1 60-lb. capacity Automatic Milk Scale.</li> <li>1 400-lb. capacity Double Beam Platform Scale.</li> <li>1 No. 2 Victor Jr. Churn, capacity 20 to 100 lbs. of butter.</li> <li>2 Medium New York Butter Ladles.</li> <li>1 6-oz. Graduate for Butter Color.</li> <li>1 Dairy Pail, 14-qt.</li> <li>1 4 ft. x 6 ft. Refrigerator.</li> </ul> | <ul style="list-style-type: none"> <li>1 Wizard Butter Printer to make five 1-lb. prints at one operation.</li> <li>1 M 8x11 Parchment Butter Wrappers.</li> <li>2 8-in. Floating Dairy Thermometers.</li> <li>1 8-oz. bottle Butter Color.</li> <li>1 56-lb. sack Butter Salt.</li> <li>1 Wood Table for Wrapping Prints. Supply of butter packages, style depending on how and where butter is marketed.</li> <li>1 Ideal Wash Sink.</li> <li>1 80-lb. keg Wyandotte Dairyman's Cleaner and Cleanser.</li> <li>1 Jersey Can Brush.</li> <li>1 Kaiser Floor Brush.</li> <li>1 Wood Head Mop.</li> <li>1 Fish Brand Apron.</li> </ul> |
|---|---|

The above is a general list and is altered to suit the requirements. It will be completed and itemized on request. See page 11 for plan of farm dairy house to accommodate the above equipment.

## For Bottling Milk From 20 to 40 Cows

### Apparatus

- 1 3 or 4 H. P. Vertical Boiler.
- 1 2 H. P. Vertical Steam Engine.
- 1 Pump Jack for Deep Well Pump.
- 1 De Laval Cream Separator (size according to number of cows) with power attachment.
- 1 Dump Vat with Filter.
- 1 Fort Atkinson Style D Bottle Washer, Rinser and Sterilizer for bottles in cases.
- 1 Style F Bottle Filler, to fill pints at one end and quarts at the other in cases.
- 1 Spiral-Conical Milk Cooler with double waterway.
- 1 Storage Tank for Icing Bottled Milk.
- 1 60-lb. capacity Automatic Milk Scale.
- 1 12-bottle 20th Century Babcock Milk Tester, with necessary glassware for testing milk and cream.
- 20 to 30 C. P. M. Co. Style "V" Milk Jar Cases, about two-thirds quart, 3x4, and one-third pint, 4x5.

- 6 Style "V" Cases 4x5 for half pint bottles (cream).
- 1 Cream Collecting Can for Separator.
- 1 Skim Milk Can, galvanized.

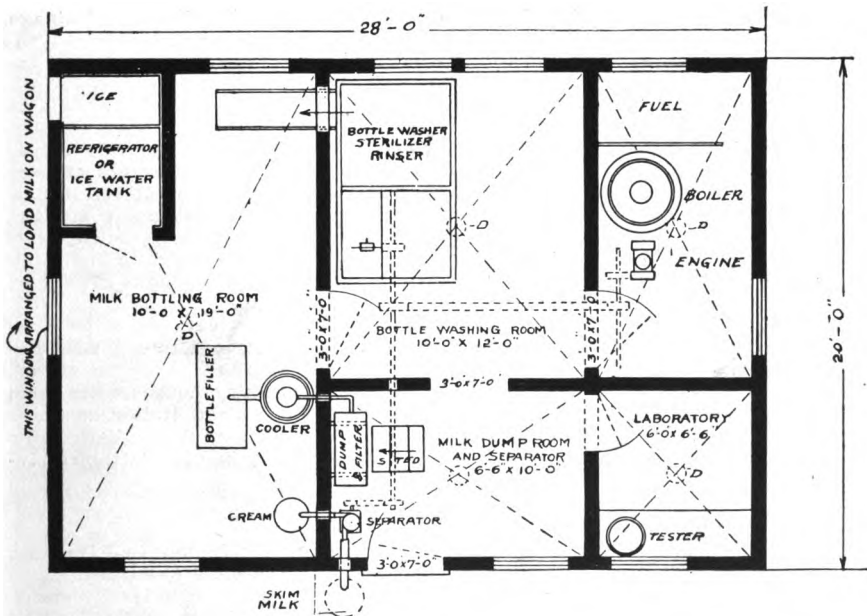
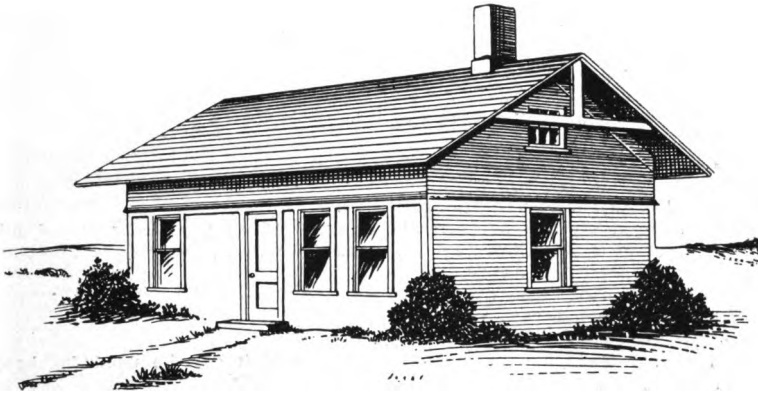
### Supplies

- 2 Heavy Wire Delivery Baskets.
- Pouring Cans and Cream Cans.
- Gross Quart Milk Bottles.
- Gross Pint Milk Bottles.
- Gross Half-pint Milk Bottles.
- $\frac{1}{2}$  Dozen Ideal Bottle Brushes.
- $\frac{1}{2}$  Dozen Palmetto Fibre Can Brushes.
- 1 Palmetto Half-round Floor Brush.
- 1 Squilgee.
- 1 Fish Brand Waterproof Apron.
- 1 Bbl. (50M) Printed Milk Jar Caps for Milk.
- $\frac{1}{2}$  Bbl. (25M) Printed Caps for Cream.
- 1 80-lb. keg Wyandotte Dairyman's Cleaner and Cleanser.

The above is a general list and is altered to suit the needs of the purchaser. It will be completed and thoroughly itemized on request.

# Farm Dairy House

## For Retail Milk Business



The plan above provides ample room for the operations incident to a retail milk business of from 20 to 40 cows. The arrangement of the rooms and apparatus is such that the work is done without conflict. The same general plan may be followed for much larger plants by increasing the over-all dimensions of the building and the several rooms to accommodate the larger machinery and storage space required.

On page 12 is given a list of equipment necessary.

## Certified Milk Dairies

Certified milk, strictly interpreted, means milk produced under conditions that assure absolute purity, and **certified to by a properly organized medical milk commission.** The production necessitates a properly arranged and constructed system of buildings.

For an elaborate certified milk farm the buildings would comprise the following:

- 1—Barn for housing the cows in milk.
- 2—Dairy house and laboratory.
- 3—Power house, laundry and lavatories.
- 4—Feed barn and silos.
- 5—Hospital for sick cattle.
- 6—Detention barn for new stock.
- 7—General barn for dry and young stock.

However, for a strictly commercial dairy farm, to produce certified milk, a smaller number of special buildings will suffice, which generally include the following:

- 1—Barn for milking cows and feed.
- 2—Dairy house and lavatory.
- 3—Power house, laundry and lavatory.

It is assumed that there are old buildings which can be used for hospital, detention barns, etc.

### The Barn

The location of the barn should be selected with a view to good drainage, preferably on a slight elevation. It should have plenty of sunlight, and in order to give all cows some sunshine should be built with its greatest length north and south. The stable part should be one story only, no storage for feed above. Walls to a height of at least 4 feet from floor, and floor should be of cement. Balance of the structure may be of wood, although masonry or cement is preferable. Floors should drain properly and the gutters and mangers be correctly spaced to fit the breed of cattle to be housed. Two very important features of barn construction are the proper area of windows and a correct system of ventilating. Cow stalls, stanchions, pens, etc., should be chosen for convenience and sanitation. Elsewhere in this catalogue we illustrate and describe equipment which meets the requirements, also litter and feed-carrying systems—all of which are essential to an up-to-date building. The whole structure and all equipments should be designed with the one paramount object of accessibility for cleaning.

At a convenient point in or near the barn a separate room should be provided for receiving the milk, where it can be weighed and strained into a milk can for transportation to the dairy building.

The means of transportation of milk from barn to dairy house varies from carrying each cow's milk separately, to a system of overhead trolley conveyor handling one or more cans, as the circumstances may dictate. When each cow's milk is carried separately, the weighing and recording may be done in the receiving room of the dairy house.

### The Dairy Building

The location of the dairy house must be decided on with reference to driveways, convenience to barn, drainage, sunlight and fresh air. It should be located about 100 feet from the barn and if possible upon a slightly higher ground level. Cement floors, and cement walls and partitions to a height of at least three or four feet above the floor level are imperative. The balance of the building may be of wood construction, but masonry or cement is better. Great care should be taken to provide good light and ventilation. The dairy building should include the following rooms or departments, which, however, may be modified or enlarged as circumstances require:

- Milk receiving room.
- Aseptic bottling room.
- Bottle washing room.
- Refrigerator or cold storage room.
- Packing and shipping room.
- Laboratory.



## Certified Milk Dairies—Cont.

**The Milk Receiving Room** is especially designed for receiving milk from the barn, weighing, keeping records and by means of a specially constructed milk filter and funnel, conducting the milk to the aseptic bottling room. The funnel must be high enough so that the milk will flow from one machine to another by gravity, as a pump should not be used in a certified plant. There must be no connection or direct communication between receiving room and other rooms in the building. A window may be placed so that the dairyman can see whether the receiving vat is being filled too fast. The filter and funnel referred to is illustrated and described on page 133.

**The Aseptic Bottling Room** must not communicate with any other room in the building except by way of an air-locked passage. It should be well lighted, with high ceilings, and will contain an all-metal milk receiving vat, milk cooler with double water way, bottle filling machine, and a capper. The milk flows from the funnel to the receiving vat, thence over the cooler and to the bottle filler by gravity. The bottles, after capping, are sealed with a seal which cannot be removed without the fact being apparent to the purchaser. The seals may be of paper, metal or tinfoil. A track for conveying cases of filled bottles directly to the refrigerator is a convenience. Clean bottles may be brought in from the sterilizer on conveying tracks or on trucks which can be moved close to the filler. The bottling room should be provided with steam and water hose connections for washing down the walls and ceiling and thoroughly washing and flushing the floor.

**The Bottle Washing Room** should not communicate directly with the bottling room, or the receiving room. The only apparatus required is a bottle washing machine and a wash sink for washing milk pails, cans and general utensils. The bottles are sterilized in cases, either in a combined oven and truck or by running a loaded truck into a high pressure sterilizing oven, which should be placed with one door opening into the wash room and the other into the aseptic bottle storage room. Steam and water hose connections should be provided in the wash room.

**The Refrigerator** may be placed in the center of the building and should be easily accessible to the bottling and shipping rooms, but there should be no openings into any other room than the shipping room, except a small opening through which the bottle cases are received from the bottle capper. If butter is made it is desirable to have a separate compartment for the butter storage. The refrigerator is best cooled by mechanical refrigeration, although ice can be used.

**The Packing and Shipping Room** should be provided with an ice breaker for breaking ice sufficiently fine for icing down the cases before shipping.

**The Laboratory** should contain Babcock tester, and other apparatus for making tests for quality, purity, solids, etc.

**Butter Making.** Any surplus milk will usually be made into butter and the buttermaking room should be so located that the milk can be run from the receiving room without inconvenience. A good arrangement is to have two outlets to the receiving vat, one for the milk to be bottled, and the other connected to sanitary piping which extends through the wall to the separator in the buttermaking room. The buttermaking room will contain the usual equipment for the amount of butter made.

**Power House, Laundry and Lavatory.** This building should be located adjacent to the dairy building, and will contain the boiler, engine, steam pumps and refrigerating machinery. The laundry will contain equipment for washing the white suits used by the milkers and employes in the dairy house. A lavatory for the employes may be located in this building.

The foregoing touches only the general principles involved in a certified dairy. We shall be pleased to enlarge upon them and to go into details with interested parties. We have installed many plants and have on hand plans of certified plants and will send samples on request with information regarding size, etc. We will also submit special lists of equipment to suit the requirements.

## City Milk Plants

Whether operating one wagon or one hundred or more, the city milk dealer cannot succeed unless he sells the purest milk possible and keeps his operating expenses down to a point that will leave a fair margin of profit. To do so, he must have a sanitary plant and modern labor-saving equipment.

We have given this branch of the dairy business much attention for several years, and our developing department has produced a line of special machinery for milk plants that is unequalled in point of completeness as well as in the efficiency and quality of the individual machines. With our line we are able to equip a city milk plant of any capacity and for any system of operation, completely.

Our wide experience and facilities are at the service of our customers. We have in many cases prepared plans for the entire plant and furnished and installed the complete equipment under a guarantee that protects the purchaser against failure of the equipment to operate properly and in harmony.

We welcome comparison of the relative merits of our goods with any on the market, confident that the discriminating buyer will recognize the real merit and efficiency of the C. P. Line. At the same time we ask that our reputation for building and selling reliable apparatus and supplies, and for standing back of our goods, be taken into consideration. In other words:

If you are an expert, investigate our machinery.

If you are not an expert, investigate us.

Our line of equipment for milk dealers includes clarifiers, pasteurizers, bottling machinery, vats, ice machines. We also manufacture supplies. Much equipment used by milk dealers is also used in other dairy plants, and it has been found impracticable to group it in a single section of the catalog. The different articles may be found by referring to the index in the back of the book. We wish, however, to call special attention to a few leaders.

**Clarifiers.** Pages 86 and 87. For producing clean milk, free from sediment and foreign solids, we recommend the De Laval Centrifugal Clarifier. This is a recent invention that is rapidly coming into use and displacing filters and other milk cleaning devices.

**Pasteurizers.** Pages 46 to 59. We illustrate and describe a complete line of pasteurizing machines of both intermittent and continuous types in capacities from 10,000 pounds per hour down to the 25-gallon batch pasteurizer. The Wizard Positive Pasteurizing Machines have been found to comply with the most rigid requirements for perfect pasteurization. They are also most simple, easily operated and cared for. Farrington Pasteurizers are well known and are alone in their class. The Eclipse is a flash heat machine, and is largely used for pasteurizing milk.

## City Milk Plants—Cont.

**Coolers.** Pages 60 to 69. We manufacture milk and cream coolers for all capacities and uses. The Alaska is a high-grade tubular cooler for severe service. Our coolers for small dairies and dairy farms afford a selection that meets all conditions.

**Vats.** Pages 70 to 82. Practically every vat requirement can be filled from our regular line of tin, and copper, vats. Our facilities for making special vats to customers' specifications are unexcelled.

**Sanitary Pipe and Fittings.** Pages 102 to 107. An essential part of the equipment of a modern plant. C. P. Sanitary Fittings are designed to meet the needs of the dairy business as fully as ordinary iron piping meets ordinary needs. We make all sizes from  $\frac{3}{4}$ -inch diameter upward.

**Bottle Fillers and Cappers.** Pages 109 to 117. Our Fort Atkinson Bottle Filling and Capping machinery includes power-driven Automatic Combined Bottle Fillers and Cappers. Also hand-operated fillers in all sizes, and capping machines for hand or power.

**Bottle Washers and Sterilizers.** Pages 174 to 182. Fort Atkinson Styles A and B Bottle Washers are soaking, brushing, rinsing and sterilizing machines of large capacity and great efficiency. Style C is a jet or hydraulic washer; styles D and E are brush machines for dairies. Our turbine and belt-drive washers are standard.

**Supplies.** Our supply specialties, such as bottles, caps, cases, tinware, brushes, etc., are of the very best quality and are best value possible. We carry large stocks at all branch offices.

## Plans, Specifications and Equipment Lists

A well thought-out, completely developed plan is a first essential to erecting or remodeling a dairy plant in order to meet the requirements and to provide for increasing the capacity as the business grows. Our experience enables us to be of much assistance to our customers. We have drawn up plans and installed machinery for hundreds of plants, embodying almost every conceivable requirement and combination. We are therefore almost certain to have planned and equipped a plant similar to the one our customer has in mind. If you will give us an outline of the conditions existing, the amount of business and plan of operation, we will send blue prints of a similar plant, or special sketches embodying our ideas. We prefer to do this before actual building operations have begun, as we take into consideration the practical operation of the plant and provide for the location of all necessary equipment. We are frequently able to make suggestions for slight changes in the building that will improve it for the purpose intended.

We will also, upon request, submit detailed lists of equipment for milk plants of any size.

## Ice Cream Factory Equipment

Pages 212 to 249 of this catalog describe our special apparatus for ice cream factories. The lists below are for the assistance of the reader contemplating the manufacture of ice cream. They are offered as suggestions only, and other items may be added, or some of those listed may be omitted, to suit the requirements of the case at hand. We shall be glad to furnish estimates on these or revised lists promptly on request.

The difference in specifications of a plant for making 100 or 150 gallons a day and one for making 20 or 30 gallons a day is largely in the packing tubs and cans, brick moulds, and other items of supplies aside from the Disc Freezer.

The required power for size "A" or "B" Disc Freezers is a small motor, gasoline engine or steam engine.

### For 20 to 40 Gallons

The equipment listed below is sufficient for an average daily output of 20 to 40 gallons—bulk goods only (with no brick apparatus included). It does not include power.

This equipment is adapted especially to the requirements of a small manufacturer who will make ice cream largely for consumption in his own establishment and will do little or no wholesaling. With an increase in the equipment of 20-qt. tubs and cans, this outfit is adapted to a small wholesale business.

- |                                    |   |
|------------------------------------|---|
| 1 "A" Disc Continuous Freezer.     | packing cans.                             |
| 1 10-gal. mixing can.              | 6 4-qt. Perfect Style ice cream           |
| 1 Round bottom sink.               | packing cans.                             |
| 2 Jersey can brushes.              | 1 Transfer ladle.                         |
| 2 Midget can brushes.              | 1 No. 336 spoon, long handle.             |
| 1 American ice cracker.            | 1 16-in. blunt bowl heavy spoon.          |
| 1 Pair 14½ in. span ice tongs.     | 1 Wooden paddle.                          |
| 1 Chest hatchet.                   | 1 Aluminum scoop.                         |
| 12 20-qt. Virginia white cedar ice | 1000 7-in. Parchment circles (for 4-qt.   |
| cream packing tubs.                | cans).                                    |
| 3 12-qt. Virginia white cedar ice  | 1000 9-in. Parchment circles (for 8 and   |
| cream packing tubs.                | 12-qt. cans).                             |
| 3 8-qt. Virginia white cedar ice   | 1000 10-in. Parchment circles (for 20-qt. |
| cream packing tubs.                | cans).                                    |
| 6 4-qt. Virginia white cedar ice   | 1 Qt. No. 3 vanilla and vanillin ex-      |
| cream carry-out pails.             | tract.                                    |
| 12 20-qt. Perfect Style ice cream  | 1 25-lb. pail Wizard ice cream pow-       |
| packing cans.                      | der.                                      |
| 3 12-qt. Perfect Style ice cream   | 1 4-oz. extract graduate.                 |
| packing cans.                      | 1 Standard Recipes for Ice Cream          |
| 3 8-qt. Perfect Style ice cream    | Manufacturers (cloth bound).              |

### For 50 to 100 Gallons

The equipment listed below is sufficient for a daily output of 50 to 100 gallons of bulk goods, and 5 to 10 gallons of brick ice cream, with sufficient flavoring extracts, crushed fruits, parchment paper, etc., to start out in good shape.

- |                                      |  |
|--------------------------------------|--|
| 1 "A" Disc Continuous Freezer.       | 1 Aluminum scoop.                        |
| 1 10-gal. mixing can.                | 1 14-qt. Ideal pail.                     |
| 1 No. 4 Babcock Official hand tester | 2000 7-in. Parchment circles (plain) for |
| 4-bottle—complete for testing milk   | 4-qt. cans.                              |
| and cream.                           | 2000 9-in. Parchment circles (plain) for |
| 1 Round bottom wash sink.            | 8 and 12-qt. cans.                       |
| 6 Jersey can brushes.                | 2000 10-in. Parchment circles (plain)    |
| 6 Midget can brushes.                | for 20-qt. cans.                         |
| 1 No. 1 Victor ice breaker, for hand | 1000 14-in. Parchment circles (plain)    |
| or power.                            | for 40-qt. cans.                         |
| 3 8-gal. Duro milk cans.             | 2 Clipper cone dishers.                  |
| 2 White duck suits.                  | 2 gals. No. 3 vanilla and vanillin ex-   |
| 1 Ice shovel.                        | tract.                                   |
| 1 Ice rammer.                        | 1 Gal. Concentrated chocolate stock.     |
| 1 Transfer ladle.                    | 1 Pint Concentrated lemon emulsion.      |
| 1 No. 336 dishing spoon.             | 1 25-lb. pail Wizard ice cream pow-      |
| 1 16-in. blunt spoon.                | der.                                     |
| 1 Ice cream paddle.                  | 1 16½-in. span ice tongs.                |

## For 50 to 100 Gallons—Continued

- |   |   |
|---|---|
| 1 Ice axe.                                      | powder.                                 |
| 3 40-qt. Perfect Style ice cream packing cans.  | 2 doz. 2-qt. carry-out pails.           |
| 18 20-qt. Perfect Style ice cream packing cans. | 2 20-qt. galvanized brick tanks.        |
| 10 12-qt. Perfect Style ice cream packing cans. | 6 8-qt. quick molding bricks.           |
| 6 8-qt. Perfect Style ice cream packing cans.   | 1 Brick mold trowel handle filler.      |
| 1000 10 1/2 x 14 in. parchment paper.           | 1000 1-qt. folding brick ice cream car- |
| 1000 1-qt. folding brick ice cream car-         | tons.                                   |
| 3 1/2-gal. jars crushed cherry fruit.           |   |
| 3 1/2-gal. jars crushed nuts.                   |   |
| 3 1/2-gal. jars crushed peach fruit.            |   |
| 3 1/2-gal. jars crushed pineapple fruit.        |   |
| 6 1/2-gal. jars crushed strawberry fruit.       |   |
| 1 Pint liquid strawberry color.                 |   |
| 1 Pint liquid yellow color.                     |   |
| 1 Pint liquid orange color.                     |   |
| 1 Pint liquid green color.                      |   |
| 2 Brick eveners.                                |   |

If brick goods will not be made, the last 16 items in this equipment may be omitted, and will reduce the cost of this outfit approximately \$60.00. In the specifications no provision is made for power.

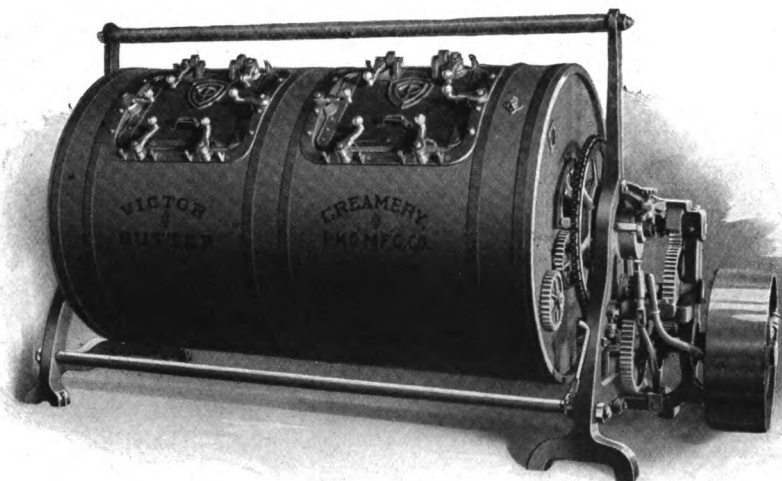
## For 200 to 400 Gallons

The equipment listed below is estimated for an average daily output of 175 to 300 gallons of bulk ice cream and 20 to 30 gallons of brick goods. The specifications are very complete, exclusive of power and erecting expenses.

- |   |  |
|---|--|
| 1 "B" Disc Continuous Ice Cream Freezer.                | 1 2x5x18 in. wash sink.                                    |
| The necessary sanitary pipe and fittings (estimated).   | 6 Jersey can brushes.                                      |
| 1 40-gal. mixing can.                                   | 6 Midget can brushes.                                      |
| 1 10-gal. mixing can.                                   | 3 Half-round floor brushes.                                |
| 1 75-gal. Wizard ice cream mixer and cream pump.        | 2 16-in. iron head mops.                                   |
| 1 12-bottle 20th Century Babcock milk and cream tester. | 1 No. 3 Victor ice breaker.                                |
| 15 40-qt. ice cream packing tubs.                       | 2 16 1/2-in. span ice tongs.                               |
| 60 20-qt. ice cream packing tubs.                       | 1 Ice axe.   |
| 20 12-qt. ice cream packing tubs.                       | 12 8-gal. Duro milk cans.                                  |
| 10 8-qt. ice cream packing tubs.                        | 6 White duck suits.  |
| 24 4-qt. carry-out pails.                               | 2 Pair wood sole shoes.                                    |
| 15 40-qt. ice cream packing cans.                       | 1 280-lb. bbl. Wyandotte washing powder.                   |
| 60 20-qt. ice cream packing cans.                       | 1 1 1/2 H. P. vertical boiler.                             |
| 20 12-qt. ice cream packing cans.                       | The necessary estimated shaft, belts, pulleys and hangers. |
| 10 8-qt. ice cream packing cans.                        | The necessary estimated pipe, fittings and valves.         |
| 24 4-qt. ice cream packing cans.                        | 6 Doz. 2-qt. carry-out pails.                              |
| 1 Ice shovel.   | 3 40-qt. galvanized brick tanks.                           |
| 1 Ice rammer.   | 26 8-qt. quick molding bricks.                             |
| 1 Can scraper.  | 1 Brick mold trowel handle filler.                         |
| 2 Transfer ladles.                                      | 1 18 1/2-in. diameter seamless tin mixing bowl.            |
| 2 No. 336 dishing spoons.                               | 5000 10 1/2 x 14 in. parchment paper.                      |
| 2 16-in. blunt spoons.                                  | 5000 1-qt. folding brick ice cream car-                    |
| 1 Ice cream paddle.                                     | tons.  |
| 2 Aluminum scoops.                                      | 3 Gals. Concentrated chocolate stock.                      |
| 2 14-qt. Ideal pails.                                   | 6 1-gal. jugs crushed cherry fruit.                        |
| 5000 7-in. Parchment circles (printed).                 | 6 1-gal. jugs crushed nuts.                                |
| 5000 9-in. Parchment circles (printed).                 | 6 1-gal. jugs crushed peach fruit.                         |
| 5000 10-in. Parchment circles (printed).                | 6 1-gal. jugs crushed pineapple fruit.                     |
| 2000 14-in. Parchment circles (printed).                | 6 1-gal. jugs crushed raspberry fruit.                     |
| 6 Clipper cone dishers.                                 | 12 1-gal. jugs crushed strawberry fruit.                   |
| 10 gal. No. 3 vanilla and vanillin extract.             | 1 Gal. liquid strawberry color.                            |
| 1 100-lb. keg Wizard ice cream powder.                  | 2 Qts. liquid carmine brilliant red color.                 |
| 1 8-oz. extract graduate.                               | 2 Qts. liquid yellow color.                                |
| 1 Book Standard Recipes for Ice Cream (cloth bound).    | 2 Qts. liquid green color.                                 |
| 1 2 1/2 x 4 ft. platform truck.                         | 2 Qts. liquid orange color.                                |
|   | 2 Brick eveners.   |

The last 20 items in this list are the equipment for brick goods, and where it is not desired to equip for making bricks, the omission of these items will reduce the equipment by upward of \$200.00.

## The Victor Combined Churn and Butter Worker



To the thousands of butter makers and creamery men who have used the Victor Combined Churn and Butter Worker since its invention its good qualities are well known and fully appreciated, as is evidenced by the ever-increasing demand.

In our 1910 model we have preserved those qualities and points of excellence that have placed the Victor at the front and have added a mechanical excellence heretofore entirely unknown in combined churn manufacture. It is made as accurately as the finest engine.

The new style frame is exceedingly rigid. In addition to the usual stringers just above the floor a third stringer has been placed overhead, thus making a rigid cradle within which the drum is hung. The legs are placed wide apart for greater solidity under heavy loads. Once the churn is set level, on a solid foundation, as it should be, it can never get out of line.

An exclusive feature of the new model Victor is the oscillating bearings. By means of this newly patented feature the gearing cannot be subjected to unusual or undue strains caused by the swelling and warping of the wood. By reference to the sectional cut the manner in which this is accomplished will be made clear.

The front gudgeon is in two parts, one being fixed to the churn in the usual way and having lugs which engage corresponding slots on the other part of the gudgeon, to which the large drive sprocket is securely bolted. It will be seen that the main sprocket wheel must always remain in alignment. The churn gudgeon being flexibly mounted any swelling or warping of the drum head simply causes it to assume a new position without disturbing the shaft, gearing or frame or straining them in any way.

On the other end of the churn the bearing itself oscillates somewhat after the manner of a universal joint, both vertical and horizontal movements being provided for. The rear bearing may be moved out or in by means of a take-up.

# The Victor Combined Churn and Butter Worker

## Description—Continued

Both main bearings of the new model churns have chain oilers to insure perfect lubrication. All that is necessary with these bearings is to keep oil wells filled with oil.

The gearing is supported by a spider having four points of junction with the front leg, making it impossible for the gears to get out of line. Bearings are all fitted with interchangeable babbit bushings. Should one become worn, all that is necessary is to loosen a set screw, slip the old bushing out, put the new one in and tighten the screw.

The Victor in its inside construction has no machinery whatever, except its rolls, which have the bearings in the heads of the drum and are positively driven by gears on the outside. The rolls always bear the same relation to each other and to the drum, they always move with the drum and cannot possibly get out of alignment. During the churning the rolls are stationary and act as a shelf assisting in the churning. The large open space in the drum gives the cream greater concussion and as a result the Victor is the most exhaustive churner known.

During the churning process the churn drive is direct, the power being transmitted from the main pulley shaft to the drum by means of a noiseless steel roller chain of high tensile strength, the slow speed and roller driving gears remaining stationary. Thus the churn is made practically noiseless, a feature that will be appreciated. The concussion of the cream in the drum can be plainly heard.

The change from churning to working speed is made by shifting a single lever. The butter is worked uniformly, every part of it passing through the rolls at each revolution of the drum, so that uneven working is impossible. The method of working is correct, the butter being squeezed between the rolls without grinding or scraping that would injure the grain.

To remove the butter from the Victor the rolls are thrown out of gear and the churn revolved once at slow speed. This brings the butter up to the doors, where it can be removed without the necessity of reaching far into the churn.

The metal clutch pulley is of new design. It is self-contained, and is adjustable by a single set screw. It is 24 inches diameter, by 8 inches face, and should be speeded at 130 R. P. M.

The churn door is flat, with rounded corners; is hinged with two hinges and fastened with six improved cam fasteners, doing away with leaking doors.

The C. and D. sizes each have one door, larger sizes have two doors.

Capacities given below for the several sizes are based on 30 per cent butter fat in cream and churn approximately half full.

Specifications

Size	Length Over All	Width Over All	Height Over All	Full Cap'y of Drum Gals.	Capacity in Pounds Butter	Shipping Weight, Lbs.
C	7' 11"	4' 2"	5' 7"	325	50 to 475	2100
D	8' 11"	4' 2"	5' 7"	401	75 to 600	2400
E	10' 3"	4' 2"	5' 7"	530	100 to 800	2400
F	10' 11"	4' 2"	5' 7"	590	150 to 900	2500
G	11' 6"	4' 2"	5' 7"	640	200 to 1000	2600

Prices on application.

Repairs—For repair list consult index.



Victor Heavy Duty Churn



# The Victor Combined Churn and Butter Worker

## Heavy Duty—Chain Drive

The characteristics of this machine are well expressed in the name. It is designed for heavy duty. It is built to stand the strain to which a churn is subjected in large plants where the machinery is operated for the full 24 hours of the day, or nearly so.

In such plants the condition is met with that practically every churning is at full churn capacity, more or less churnings being made according to the run, consequently the requirements of the churn are different than that ordinarily imposed where the size of the churning varies from a quarter load to a full load.

In accordance with our established policy of building apparatus for all requirements we have brought out the Heavy Duty Victor which is made only in two sizes corresponding in outside dimensions and rated capacity with the two larger sizes of regular Victor churns.

It differs from the regular model churn in the heavier and stronger construction throughout. The drum is made of thicker material; the castings are heavier throughout as is also the sprocket and drive chain.

The frame is extended and an additional pair of feet provided, which support the heavy gearing directly from the foundation also making an out-board bearing for the drive pulley. There are six points of suspension on this churn as compared with four on the regular machine.

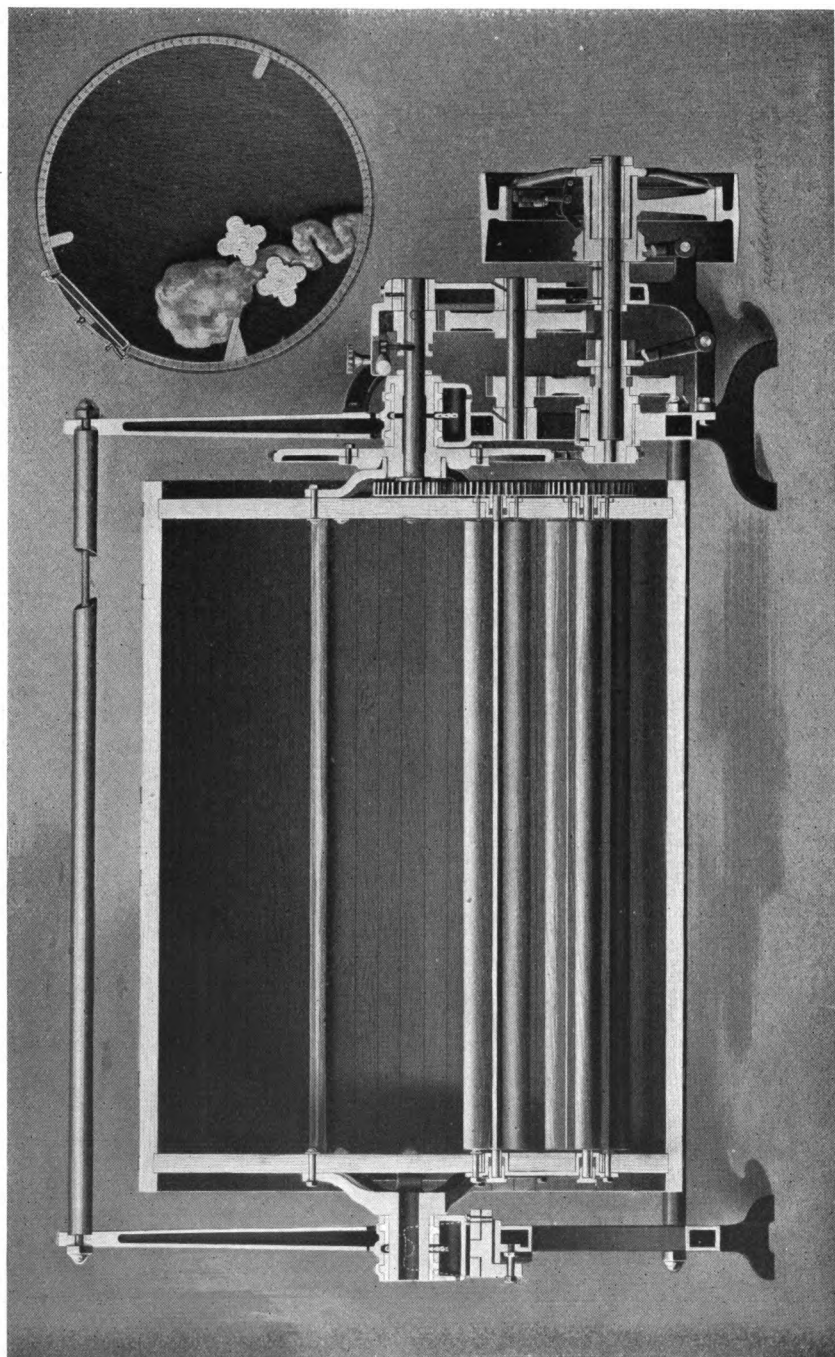
The Heavy Duty Victor has two sets of working rolls, four rolls in all, arranged in pairs on opposite sides of the drum. The rolls are so adjusted that they mesh, the corner of one coming in the middle of its mate. As they turn in working the butter the space between them is the same at all times, consequently the butter is subjected to an even, uniform pressure which does not injure the grain and prevents mottles.

This machine is made in two sizes only.

### Specifications

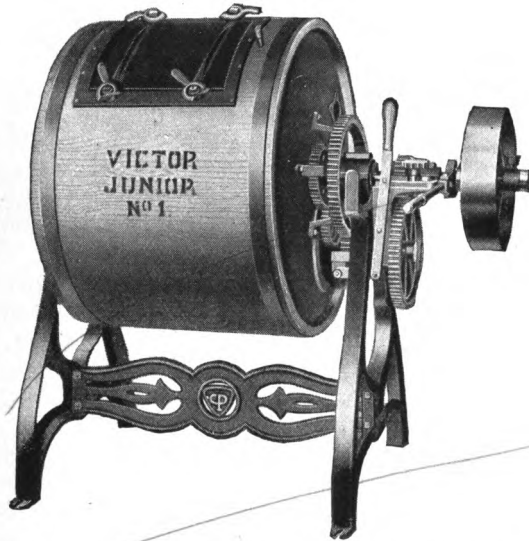
Size	Length Over All	Width Over All	Height Over All	Capacity in Pounds	Shipping Weight, Lbs.	Prices on application
Heavy Duty F	11' 9"	4' 2"	5' 7"	900	3150	
Heavy Duty G	12' 5"	4' 2"	5' 7"	1000	3300	

**Repairs:** For list of repair parts consult index.



Sectional View of Victor Standard Factory Churn

# The Victor Junior Combined Churn and Butter Worker



In the Victor Junior Dairy Churn we offer a machine that puts the farm butter maker on a level with the creamery butter maker as far as tools are concerned. It is just as practical, just as complete and just as necessary to farm butter making as the factory Victor is to factory butter making.

We make and sell more churns for creamery use than all other concerns combined. More butter is made in our churns than in all other makes. You can absolutely rely on the Victor Junior in every respect. We guarantee it in every detail.

It is a simple machine. Anyone who knows how good butter should be made can operate it successfully. In churning, the main shaft is connected directly to the drum, and the churning is identical with that done in a barrel or box churn, the working rolls serving as shelves to lift the cream, giving the necessary concussion to churn quickly and get all the butter. The progress of the churning can be observed through a small glass window in the end.

When the churning is finished the buttermilk is drawn off and the butter washed in the usual way. The salt is then sprinkled over the butter and you are ready to proceed with the working. See next page for illustrations of the working process.

To convert the churn to a worker it is only necessary to move the speed lever and throw the rolls into gear. When working, the drum moves slowly, and the butter is squeezed between the working rolls, which effectually removes every trace of buttermilk, at the same time mixing the salt without in the least injuring the grain. When finished, the butter is brought right up inside the door in a compact mass ready for easy removal.

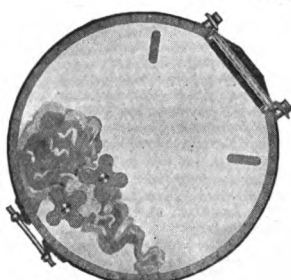
An important advantage of this churn is that the butter is not exposed to outside air at any stage of the process, but is protected from heat, dust, flies or foul odors, and its natural rich aroma is retained.

Churns are regularly equipped with clutch pulley for belt drive. The smaller size will, however, be furnished with crank for hand power if wanted. Pulley should run 30 to 35 revolutions per minute to drive churn at proper speed.

	Diam. In.	Lgth. Outside, In.	Length Over		Pulley.	Shipping Capacity,		Price.
			In.	All, In.		W'ght, Lbs.	Lbs.	
No. 1 .....	32	28½	45		14x3	420	50	\$60.00
No. 2 .....	32	42½	59		20x4	500	100	75.00
No. 1 .....	32	28½	45		crank	420	50	55.00

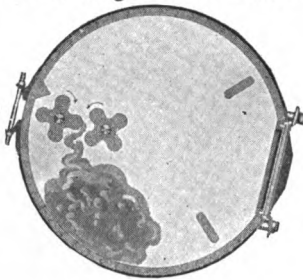
# The Victor Junior Churn

## The Working Process Illustrated



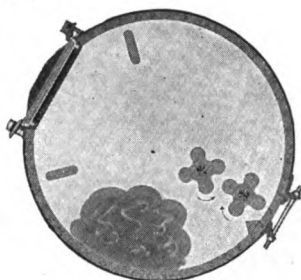
No. 1.

Shows the Victor Junior in the operation of working butter, just as the mass begins to pass through the rollers. The drum is constantly turning, but the butter remains at or near the bottom, being caught up by and carried through the rollers at each revolution of the drum.



No. 2.

Shows the operation of working with the drum a little further advanced than in No. 1, the butter now having passed through the rollers. All the butter goes between the working rolls once at each revolution of the drum. This is one of the secrets of even working.

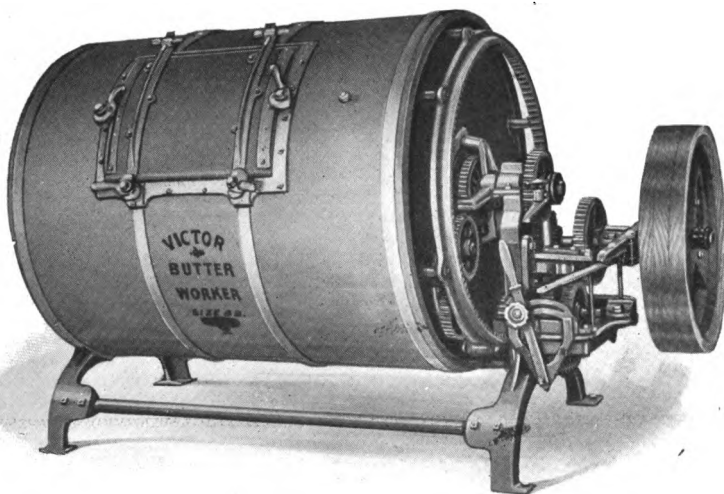


No. 3.

Shows the churn about one-half revolution further on with the rolls about to take up the butter again. It requires but a few minutes to work butter perfectly in the Victor Junior.

The above illustrations also serve to illustrate the principle of all Victor Combined Churns and Workers.

## The Victor Combined Churn and Butter Worker

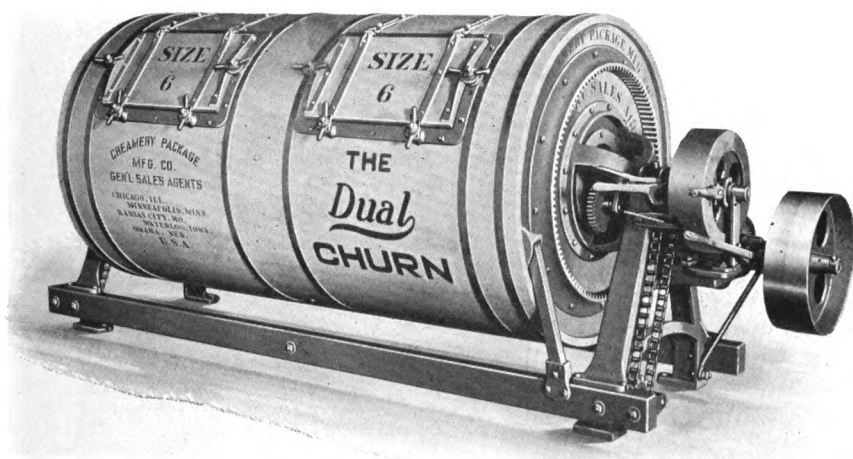


### Dairy Sizes B and BB

This churn is designed for large dairies and small creameries. The working principle is exactly the same as the factory sizes, but it is driven by gears instead of a chain.

Sizes	Diameter	Length Outside	Length Over All	Capacity in Pounds	Shipping Wt. Pounds	Price
B	3' 4"	3' 6"	5' 9"	20 to 150	900	\$125.00
BB	3' 4"	4' 2"	6' 5"	20 to 225	1000	135.00

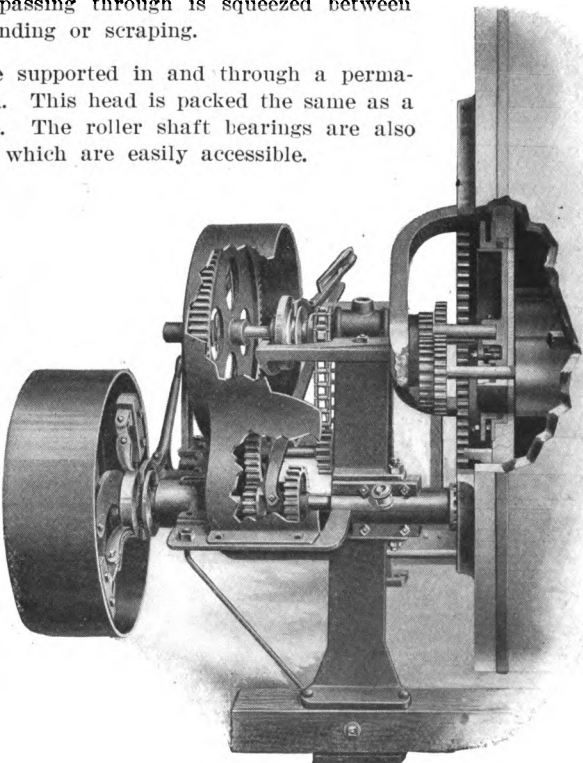
## The Dual Churn



The Dual churn has two positively driven central working rolls but no loose head. In eliminating this we have overcome the only objection to this type of churn. The two rolls rotate toward each other at the same rate of speed, so that butter in passing through is squeezed between them without rubbing, grinding or scraping.

The working rolls are supported in and through a permanently tight sectional head. This head is packed the same as a piston joint on an engine. The roller shaft bearings are also fitted with stuffing boxes which are easily accessible.

The working rolls can be thrown into gear at any time, whether the churn is churning or working and whether they are being held horizontal with each other or are revolving with the churn. The working rolls can also be thrown into gear and revolved while the drum is standing still. The advantage of these features is in beating down frothy cream, as is sometimes necessary when churning a full churning of cold and thin cream.



## The Dual Churn—Continued

**Larger Working Capacity**—The working rolls are dropped several inches below the center of the churn, as will be seen by the sectional cut. This increases the working capacity and furthermore enables the operator to remove the butter more easily.

**Impossible to Break Rolls**—Front and rear ends of the rolls are kept in perfect alignment by a chain-lock system, making it impossible for them to become twisted in the churn and cause breakage.

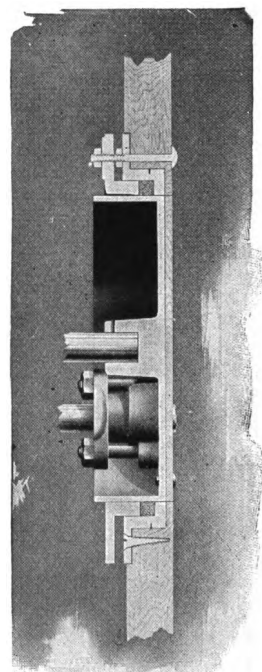
**Accessibility of Levers**—All levers are at the gear end of the churn. The operator can reach all of them from one position. There is no necessity of moving around the churn to see that everything is properly adjusted. Everything has been done to make the Dual simple, trouble proof and easily operated. Gears are protected by gear guards.

This churn has been thoroughly tested under the most trying conditions and has proved itself a most exhaustive churner and a thorough worker. It has also been demonstrated to be a most durable machine, one of the first ones made having been used in a large creamery for several months, making more than 900 churnings, every churning to full capacity, equal to three years' use in an ordinary factory, where but one churning is made per day, and in that time has not required a single repair part.

This record is proof of the correctness of the proportions of the various parts and shows that each and every part is strong enough to stand the strain to which it is put.

The draft of the Dual churn is steady both in churning and working, saving wear and tear on belts, pulleys, shafting and engine and requiring less horsepower to drive it.

All sizes are fitted with ring gear drive as illustrated. All hoops on the drum are galvanized. Covers are of the flat pattern, which has proved so satisfactory in the past.



**THE SECTIONAL HEAD.**

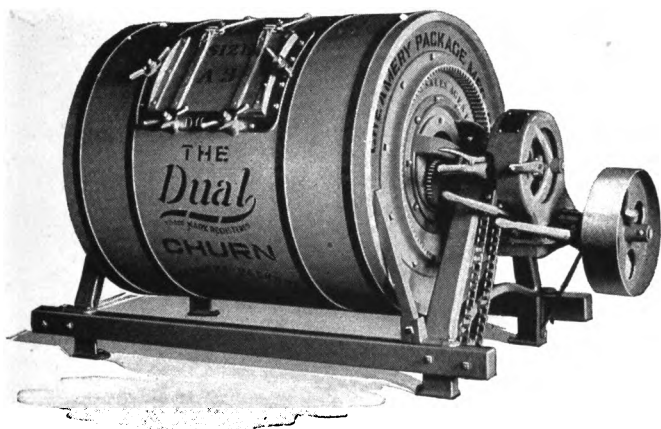
Permanently tight, leakage of cream prevented by hydraulic packing ring, can be repacked without taking churn to pieces.

### Specifications

Size	Capacity pounds Butter	Length Over all	Diameter of Barrel	Pulley Diameter and Face	Shipping Weight pounds
3	440	7' 8"	4' 1"	20" x 5½"	1500
4	600	8' 11"	4' 1"	20" x 5½"	1600
5	750	10' 2"	4' 1"	20" x 6¼"	1750
6	900	11' 5"	4' 1"	20" x 6¼"	1850
7	1000	12' 8"	4' 1"	20" x 6¼"	2000
Heavy Duty					
6	900	12' 4½"	4' 2"	20" x 7½"	2700
7	1000	13' 7½"	4' 2"	20" x 7½"	2800

Sizes 3 and 4 have one door; larger sizes have two doors. Speed of pulley is 210 R. P. M. for all sizes. For repair list consult index.

## The Dual Churn



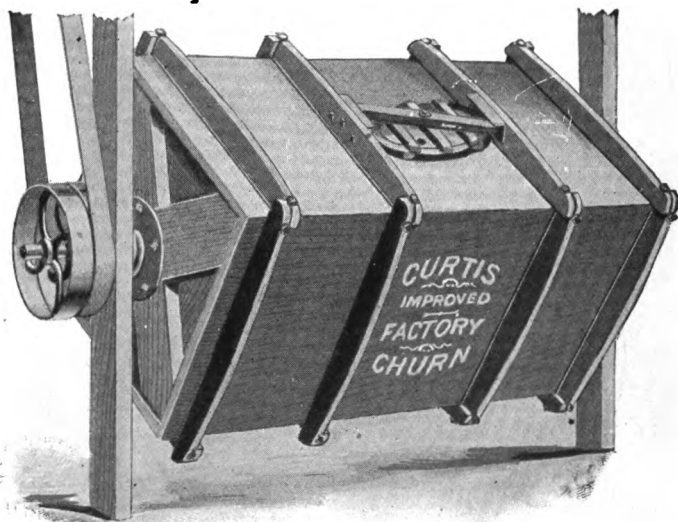
Sizes A-2 and A-3. For Large Dairies and Small Creameries.

The Dual Dairy Churn is essentially the same in all respects as the Dual's for factory use, but made in smaller sizes. The working is accomplished by two fluted rolls in the center of the drum, the butter being brought up to and deposited on the rolls by shelves or flights at the periphery of the drum. As the butter is not delivered to the rolls all at once, but in several portions the working is continuous. The power required for churning and working is steady. The Dual is thoroughly well made in every respect, is easily understood and operated, and is a desirable purchase for any dairyman, creameryman or milk dealer who requires a churn of this capacity.

### Specifications

No.	Full Capacity.	Will Churn.	Will Work.	Length Over All.	Diam. of Drum.	Shipp'g Weight.	Price.
A2	100 gal.	75 gal.	150 lbs.	5 ft. 9 in.	3 ft. 3 in.	800 lbs.	\$140.00
A3	145 gal.	110 gal.	220 lbs.	7 ft. 9 in.	3 ft. 3 in.	1,000 lbs.	150.00

## Square Box Churns



Sizes and Prices

Size	Will Hold Gallons	Will Churn Gallons	Inches Square Outside	Inches Long Outside	Price Pine	Price Cedar
1	100	50	34	33	\$30.00	\$33.00
1½	150	75	34	44	35.00	39.00
2	200	100	34	55	40.00	44.00
2½	250	125	34	66	45.00	50.00
3	300	150	34	76	50.00	55.00
3½	350	175	34	86	55.00	60.00
4	400	200	34	96	60.00	66.00
4½	450	225	34	106	65.00	72.00
5	500	250	34	116	70.00	78.00

Churns without pulleys, list, less.....\$2.75

## Covers and Rims

Any Style, Round or Oblong

Cover complete, with churn rim .....each, \$5.00

“ without churn rim ..... “ 3.25

Churn rim without cover ..... “ 1.75

In ordering churn covers or rims always give make and size of churn and style of cover, whether oblong or round. If oblong give both inside diameters of the churn rim. If round give the one diameter of rim, also state whether the cover only or the cover and rim are wanted.

## Cover Cork

½ in. x ½ in. (to replace the average cover with cork order 8 ft.)...per ft., 5 cts.  
 ⅝ “ x ⅝ “ ( “ “ “ “ “ “ 8 ft.).. “ 8 “





**Stoddard Hand Churn.**  
10 to 60 gallons.

## Stoddard Barrel Churn

The oak staves used in making Stoddard Barrel Churns are thicker than usually used, so the barrel is stronger.

The locking device is very strong and has an adjustable feature at the center so that, as the cork wears down, it can still be drawn up tight.

The barrels are hand-made and are planed smooth inside and out.

The frame is of hardwood and standards have a rivet below gudgeon, so cannot split.

A heavy counter-weight is on the bottom to counteract weight of cover so it turns easily.

### Prices, Dairy Sizes, Hand Power.

No. 1.	10-gallon size, 1 to 4 gallons capacity.	Price.....	\$ 9.00
No. 2.	15-gallon size, 2 to 7 gallons capacity.	Price.....	9.50
No. 3.	20-gallon size, 3 to 9 gallons capacity.	Price.....	10.75
No. 4.	25-gallon size, 4 to 12 gallons capacity.	Price.....	12.00
No. 5.	35-gallon size, 5 to 16 gallons capacity.	Price.....	14.00
No. 5½.	45-gallon size, 5 to 20 gallons capacity.	Price.....	17.00
No. 6.	60-gallon size, 6 to 28 gallons capacity.	Price.....	20.00

12-in. single iron or wood pulley, including extra heavy frame..\$ 4.00

12-in. T. & L. pulley, including extra heavy frame.....\$5.00

12-in. T. & L. pulley only..... 3.00

### Factory Sizes.

The cut is an illustration of the 90-gal. Factory Churn, with frame and T. & L. pulley. Can furnish churn without frame if desired.

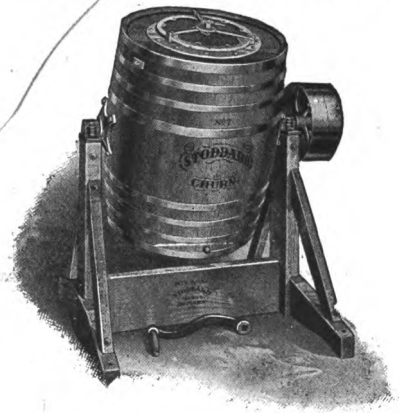
No. 7. 90-gallon Churn, churns 10 to 40 gals., T. & L. pulleys, without frame, to be hung with stationary uprights, price.....\$45.00

With frame complete.....\$50.00

No. 8. 120 gal. Churn, churns 10 to 60 gals. cream, T. & L. pulleys without frame, to be hung with stationary uprights, price 50.00

With frame complete .....\$55.00

Prices of Stoddard Churns are F. O. B. New England factory.



**Stoddard Factory Churn.**  
90 and 120 gallons.

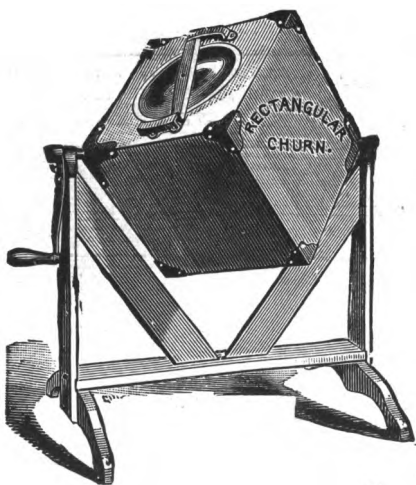
## Ideal Dairy Barrel Churns

This is a thoroughly reliable and well-made Churn. The barrel is made of hard-wood and well coopered. The cover is metal-bound and has a sight-glass to show when churning is finished. Any size Churn can be furnished with tight and loose pulleys. Regularly furnished with crank for hand power. The smaller sizes turn very easily by hand, but for large dairies where power is at hand we recommend belt drive. Pulleys should be ordered with Churn. Crank is always included, pulleys being placed on opposite side.



### Sizes and Prices

Size No.	Holds Gals.	Churns Gals.	Price with Crank.	T. & L. Pulleys, if wanted.	
				Size In.	Price.
0	5	1 to 2	\$ 8.00	10x2¼	\$2.00
1	10	1 to 5	9.00	10x2¼	2.00
2	15	2 to 7	10.00	10x2¼	2.00
3	20	3 to 10	11.00	10x2¼	2.00
4	25	4 to 12	14.00	10x2¼	2.00
5	35	5 to 17	16.00	10x2¼	2.00
5½	50	8 to 25	22.00	12x2¼	2.50
6	60	10 to 30	26.00	12x2¼	2.50
7	75	15 to 40	30.00	14x2½	3.00
8	90	20 to 50	35.00	14x2½	3.00



### Curtis Rectangular Churn

The Curtis Rectangular Churn has been on the market for more than 40 years. Thousands of them have been sold. It has stood the test of time and is today one of the most popular styles of churns for dairy use.

It works very easy and does not break the grain of butter, which will be appreciated by all good butter makers. The opening is large; easy to clean and air. No inside mechanism of any kind. Simply a box made of clear wood with iron corner-pieces, with gudgeons at two opposite corners. The frame or stand is made of sound stock, well braced. It is one of the most perfect churns on the market.

Seven sizes, made for a dairy of one cow or thirty. Full capacity of churns given. They churn only half full.

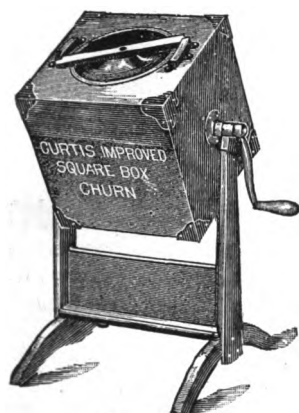
### Sizes and Prices

No.	Holding.	Weight.	Each.	No.	Holding.	Weight.	Each.
0	7 gals.	30 lbs.	\$ 8.00	3	20 gals.	50 lbs.	10.00
1	10 gals.	33 lbs.	8.50	3½	26 gals.	60 lbs.	12.50
2	12 gals.	45 lbs.	9.00	4	40 gals.	75 lbs.	16.00
				5	60 gals.	95 lbs.	23.00

Nos. 4 and 5 are fitted with cranks at both ends.

Prices on this Page Subject to Discount.

## Curtis Square Box Dairy Churns



Nos. 0 to 3 1/2.

This illustration shows the Curtis Improved Square Box Churn, sizes 0 to 3 1/2, inclusive. It is made similar to the rectangular Churn in all respects, having protecting corner-irons. The gudgeons are attached to the sides of the Churn, however, instead of at the corners. This style is preferred by many. The cover is of heavy tin and securely fastened.

Capacities given are holding capacities when full. They will churn half full.

### Sizes and Prices

	Holds.	Weights.	Each.
No. 0 .....	7 gals.	30 lbs.	\$ 8.00
No. 1 .....	10 gals.	33 lbs.	8.50
No. 2 .....	12 gals.	45 lbs.	9.00
No. 3 .....	20 gals.	50 lbs.	10.00
No. 3 1/2 .....	26 gals.	60 lbs.	12.50

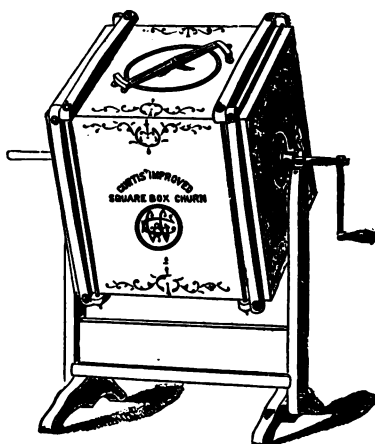
The Nos. 4, 5 and 6 Square Box Churns are adapted to large dairies. They have a crank on one side; a long gudgeon for pulleys on the other. Strong bands and rods running around the churns make them very substantial.

Prices of Churns are given without pulleys.

	Holds.	Churns.	Each.
No. 4.....	40 gals.	20 gals.	\$16.00
No. 5.....	60 gals.	30 gals.	23.00
No. 6.....	80 gals.	40 gals.	26.00

### Pulleys for Power Drive

Nos. 4, 5 and 6 Square Box Churns will be fitted with pulleys for power drive if wanted, or pulleys can be ordered separately and attached to the Churn at any time. We furnish two sizes, 12-inch or 14-inch diameter, with 3-inch face in sets of two, one tight and one loose (T. & L.).

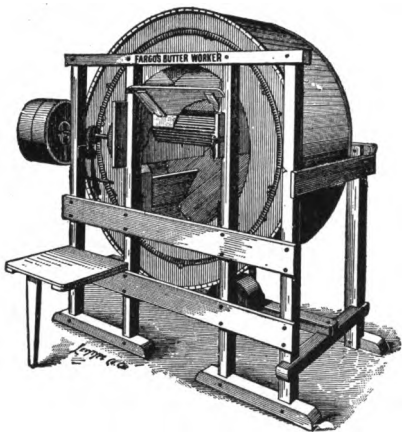


Nos. 4, 5 and 6.

Pulleys, 3x12-inch, per set.....	\$6.00
Pulleys, 3x14-inch, per set.....	6.75

## Drum Type Butter Workers

### Fargo "Alpha"



Regular machine as illustrated has a capacity of 300 pounds at one working. Butter is easily removed when finished by inserting a tray (which is furnished but not shown) while drum revolves, the butter dropping from rolls to the tray. Floor space required 83x40 in.; size of pulleys, T & L, 20x6, 40 R. P. M.; shipping weight, complete, 700 pounds.

Price, \$100.00

### Jumbo Fargo Worker

Similar to machine illustrated, but larger, heavier and stronger. It is 84 inches high, 60 inches deep, 97 inches long, and has a capacity of 600 lbs. of butter at one working.

Price, \$200.00

#### Extras for Fargo "Alpha" Worker.

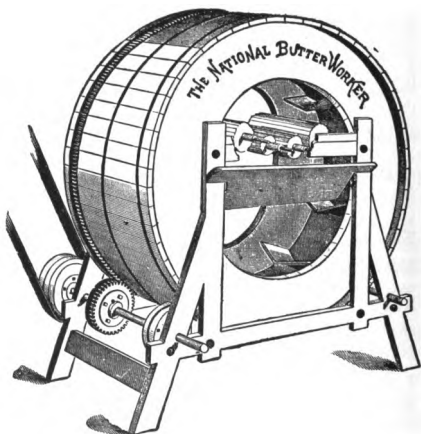
Clutch Pinions.....	\$1.50
9-inch Gears.....	1.25
Pinion Lever.....	.50
Gudgeon Levers.....	1.00
Shaft .....	.75

Track, 8 sections to a set, per section .....	.30
Wood Rollers, each.....	2.25
Inside Boxing.....	8.00
Iron Boxes, per set.....	.75

## The National Worker

As illustrated at the right. With each worker is furnished a truck for removing the butter; this truck has a tray top which overhangs so that the wheels go underneath and the tray goes into the drum and catches the butter as it falls from the rolls. Capacity, 300 pounds; pulley, 18x4, 50 R. P. M.; floor space, 69x49 in.; weight, 0 pounds.

Price, \$100.00

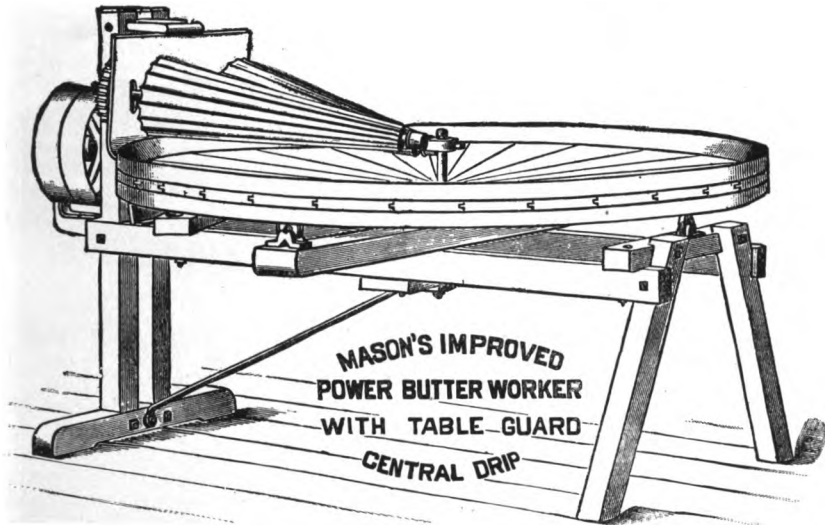


#### Extras for National Butter Worker.

No. 1, Large Gear Wheel.....	\$1.00
No. 23, Small Gear Wheel.....	.75
No. 9, Large Sprocket Wheel..	1.75
No. 10, Small Sprocket Wheel..	1.50
No. 11, Driving Gear to Drum..	1.20
No. 12, Track for Drum, per section .....	.50

Shaft .....	1.25
Rollers and Collars for same....	1.30
Rear Shaft .....	1.50
Sleeve, each .....	.50
Wooden Wheels on Butter Carrier, each .....	.25

## Mason Power Butter Worker



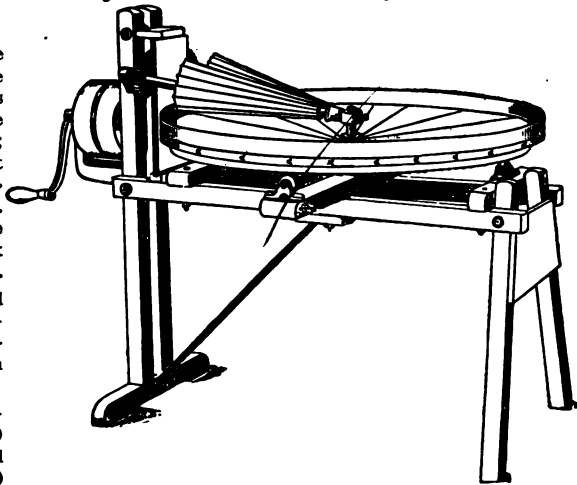
### Price

With black castings, plain table.....	Weight, 330 pounds, \$50.00
With black castings, table guard.....	Weight, 335 pounds, 55.00
With galvanized castings, plain table.....	Weight, 330 pounds, 60.00
With galvanized castings, table guard.....	Weight, 335 pounds, 65.00
Size of pulley, 12x3 inches. Revolutions per minute, 60. Capacity, 200 pounds.	

## Mason Dairy Butter Worker

No worker at any price is better than the genuine Mason. The principle is absolutely correct. There is no rubbing or greasing; just an even pressure that mixes the salt evenly without injuring the grain. The table slopes to the center and the buttermilk drains off at that point.

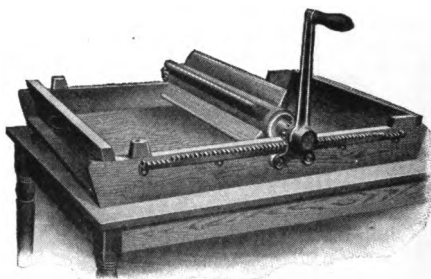
Each machine is fitted with tight and loose pulleys. We ship these workers from our Wisconsin factory.



No. 0—3-ft. table, galvanized castings, capacity 60 lbs., pulley 12x3 in., speed 60 revolutions, weight 140 lbs., with crank and pulleys for hand or power.....	\$25.00
No. 1—4-ft. table, plain castings, capacity 75 lbs., pulley 12x3 in., speed 60 revolutions, weight 290 lbs., no crank furnished.....	35.00
No. 1, with galvanized castings.....	45.00

## Wizard Butter Worker

This style worker is a favorite with many. The butter is placed in the tray, salt added, and then worked by turning the crank, which causes the fluted roller to travel to and fro. The metal parts are all galvanized to prevent rust. Cut shows worker set on table, but prices below are for worker only without legs.



No. 1. Size 23x36 in. and 2½ in. deep inside, capacity 50 lbs., weight 45 lbs. ....\$10.00

No. 2. Size 20x36 in. and 2½ in. deep inside, capacity 30 lbs., weight 29 lbs. \$ 8.00

No. 3. Size 17x27 in. and 2½ in. deep inside, capacity 20 lbs., weight 25 lbs. 7.00

No. 4. Size 14x23 in. and 2½ in. deep inside, capacity 10 lbs., weight 20 lbs. 6.00

We also manufacture larger sizes, especially designed for mixing, reworking and coloring, or for creamery use.

No.

0. Size 23x27 in. and 3 in. deep inside, capacity 75 lbs., weight 60 lbs. ...\$12.50

00. Size 23x56 in. and 3 in. deep inside, capacity 112 lbs., weight 80 lbs. ... 15.00

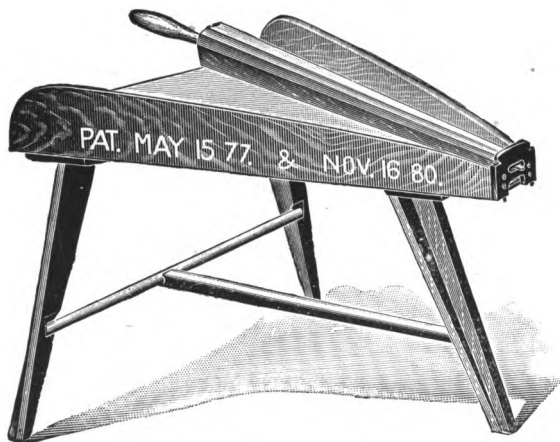
000. Size 23x72 in. and 3 in. deep inside, capacity 150 lbs., weight 100 lbs. 18.00

If desired, we can send legs with any size Wizard worker, to be set up by purchaser on arrival. Freight or express charges are much less when shipped in this way than when shipped set up.

Legs, per set, with any size Wizard worker.....\$4.00

Prices subject to discount.

## Lever Butter Worker



The Lever Worker with folding legs is a favorite style. It can be taken down or set up in a moment by anyone. The butter is subjected to an even pressure that works out every vestige of buttermilk without injuring the grain. The lever is pivoted loosely at the lower end and every part of the table can be utilized.

Made of selected hardwood, strong and substantial. Nothing to wear out.

### Sizes and Prices

No. 0. 20 in. wide, will work 15 lbs., weight 30 lbs. ....\$ 5.00

No. 1. 30 in. wide, will work 25 lbs., weight 40 lbs. .... 6.50

No. 2. 40 in. wide, will work 35 lbs., weight 60 lbs. .... 7.50

No. 3. Factory size, will work 60 lbs., weight 80 lbs. .... 12.00

Prices subject to discount.

## Eureka Butter Worker

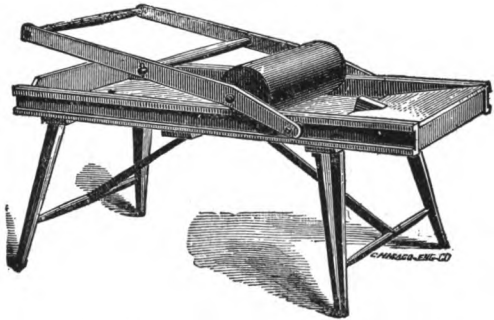
This Worker is so constructed that all portions of the butter are worked equally under an even pressure. The butter is rolled out in a thin sheet, a portion of salt sifted on, then by a quick backward movement of the roller the butter is turned bottom side up or folded in the tray, rolled out again, and again turned and rolled. The working is absolutely even, without injury to the grain. The legs fold up for convenience.

No. 1. Family size, to work 25 lbs., weight 70 lbs. Each .....\$10.00

No. 2. Dairy size, to work 50 lbs., weight 80 lbs. Each ..... 12.00

No. 3. Factory size, to work 75 lbs., weight 100 lbs. Each .....\$15.00

No. 4. Factory size, to work 100 lbs., weight 130 lbs. Each ..... 20.00



## Original Waters Butter Workers



Ready for Working

The roller has six flutes and is cut out of one solid block of hardwood and sandpapered by hand. Every roller is perfect.

Our Waters Worker has had a splendid reputation for many years and the same painstaking care and hand work are still put into its construction. It is a favorite in the East.

Note that it has a substantial hardwood stand.

The tray has the bottom made of a single clear board.

Tray can be instantly removed and used as a butter bowl, if desired.

Castings are galvanized. Grips on sides are malleable and cannot break.



### Sizes and Prices

Prices are F. O. B.  
Vermont factory

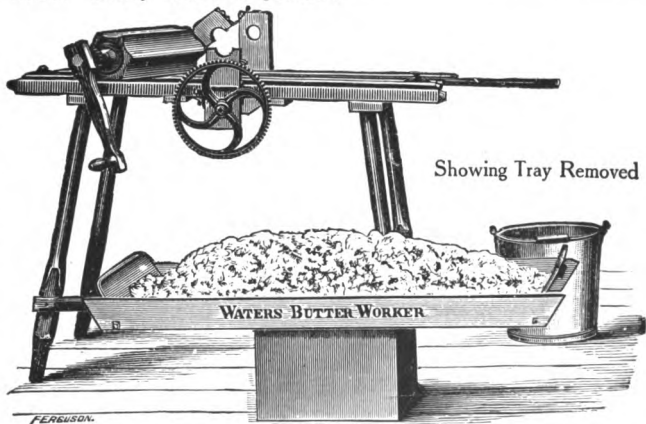
No. 0 Tray 27x14 in., capacity 1 to 15 lbs. ....\$7.00

No. 1 Tray 36x15 in., capacity 5 to 30 lbs. ....\$8.00

No. 2 Tray 36x18 in., capacity 5 to 40 lbs. ....\$9.00

No. 3 Tray 39x20 in., capacity 5 to 50 lbs. ....\$10.00

No. 4 Tray 48x22 in., capacity 10 to 75 lbs....\$12.00



Showing Tray Removed

# The Wizard Agitator

## **A Machine of Many Uses.**

The Wizard Agitator, which was originally developed to meet a demand for a better cream ripener, has proved one of the most useful machines ever introduced to the dairy industry. It is now used, and successfully, for many other purposes, such as pasteurizing, cooling and mixing. Its efficiency in the many kinds of work to which it has been put is no doubt due to the Wizard coil.

## **The Most Efficient Coil.**

The Wizard coil is of the spiral disc type. When in motion it keeps all the contents of the vat in a state of continuous agitation, at the same time giving an end to end movement which quickly reduces the contents to a mass of uniform composition, consistency and temperature. No other type of coil has succeeded in equalling the efficiency of the Wizard as regards mixing or emulsifying. The coil also has a very large area of surface for heating and cooling and heats and cools quicker under the same conditions than other coils. In order to obtain full efficiency in cooling it is of course necessary to supply plenty of cooling medium, water, ice water, or brine, as the case may be. Occasionally users do not get as quick cooling as they should because of an insufficient supply of cooling medium. The thorough mixing, and uniform and rapid heating and cooling places in the hands of the operator superior facilities for manipulating and controlling temperatures which are of great advantage from a practical point of view.

## **As a Cream Ripener.**

The Wizard Agitator is still without a peer. It thoroughly emulsifies the cream, and, if a starter is used, distributes it evenly through the vat so that uniform ripening results. It also smooths the cream, the clotted, leathery portions being broken up and incorporated into the mass to receive the benefit of the starter action. When cream is ripe it may be quickly cooled. The jacket and cover are thoroughly insulated and cream may be held over night at churning temperature.

## **As a Pasteurizer.**

Hundreds of Wizard Agitators are used as cream or milk pasteurizers and for this purpose they prove very successful. The pasteurizing is done under the very best conditions. Heating is quickly accomplished, and, the milk or cream being agitated during the process, is uniform in all parts of the vat. The impossibility of any milk or cream passing through without being heated to pasteurizing temperature guarantees thorough pasteurization, a feature that appeals to those who believe that if pasteurizing is worth doing it is worth doing well. From the standpoint of efficiency no pasteurizer ever built excels the Wizard Agitator. It conforms to every requirement. On pages 46 to 51 we illustrate and describe special Wizard Pasteurizing Machines for milk and we recommend a perusal of the description of those machines to all who are interested in the best methods of pasteurization.



### **Combined Pasteurizer-Ripener.**

The possibilities of the combined pasteurizer and ripener should be considered by all creamerymen. Hundreds of plants use the Wizard for both purposes and with entire success. Many of the first prizes and other high awards at butter scoring contests, during the last year have been won by creameries using the Wizard Agitator for both pasteurizing and ripening, and these awards are in themselves positive proof that the Wizard is an entirely practical combined machine. Appreciating the importance of this line of work, we have embodied in the Wizard all necessary attachments for pasteurizing and all ripeners now manufactured can be used as combined pasteurizer-ripeners without change.

Particular attention is called to the fact that the Wizard has a positive circulating system for the heating medium. Consequently, the machine operates just as efficiently at pasteurizing temperature as at a lower degree.

By using a combined pasteurizer-ripeners the creamery saves on first cost of equipment. In order to pasteurize successfully with a continuous pasteurizer a ripener is necessary to take proper care of the cream. With a Wizard the creamery has a perfect pasteurizer and ripener in one machine and saves the entire cost of pasteurizer, cooler, piping, pumps and in many cases a receiving vat, also the floor space required to install the extra machinery. There is also a saving in operating expense. It requires much less attention to pasteurize in a Wizard. When the cream is in, start to heat. No attention need be paid until the cream is almost hot enough. When hot, shut off the steam and turn on the cold water, or, if holding plan is followed, allow to stand at pasteurizing temperature for ten to thirty minutes, as the case may be, then start to cool. While the cream is heating, holding and cooling, the operator may be doing other work, and he is not obliged to watch the machine constantly as with a continuous pasteurizer. Furthermore, there is no extra machinery to wash up. The amount of cleaning up is just the same whether you pasteurize or not.

The combined pasteurizer-ripeners makes it possible for every creamery to be equipped to make pasteurized butter at no extra expense. In many cases it is desirable to pasteurize during a part of the year only. With a Wizard, the creamery is ready to pasteurize at a moment's notice and during the season when not pasteurizing there is no idle equipment rusting out. As compared with separate machines, the combined pasteurizer-ripeners saves:

One-fourth to one-half the first cost.

One-half the floor space.

Nine-tenths the extra labor of operating.

All the extra cleaning.

### **As a Cooler.**

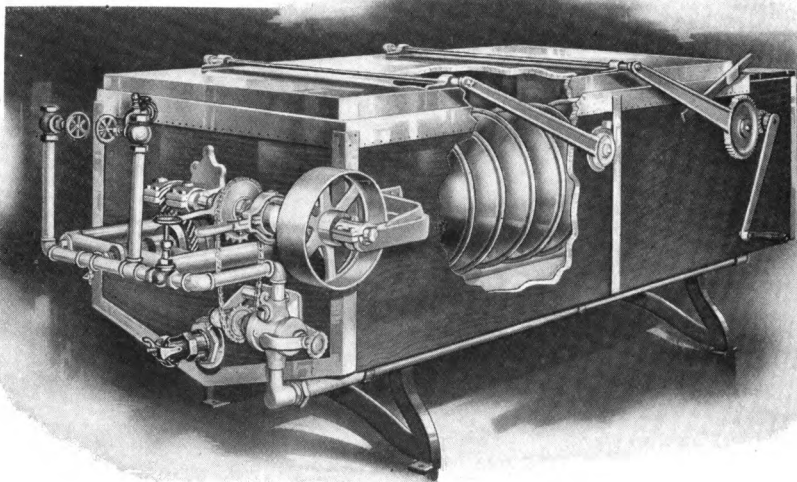
Wizards are largely used for cooling purposes. As storage vats for ice cream stock, etc., they are in general use and give the best of satisfaction.

### **Write Us for Further Information.**

It is impossible here to enumerate all of the many possible uses of the Wizard Agitator. It is in brief a most efficient machine for heating, emulsifying, mixing, and cooling, and can be adapted to any work where any or all of these qualities are needed. We invite correspondence regarding your problems along these lines and are confident we can serve you to your advantage.

# The Wizard Agitator

Type B—Pasteurizer—Ripener



Patented May 23, 1905

**Regular Equipment**—The regular Wizard Agitator includes the circulating pump, jet for pasteurizing copper lined ice box, wrenches, also valves and piping as shown in cut. Spraying attachment in ice box and safety device on coil inlet are included. It is ready for use without any extras whatever, it being only necessary to make steam and water connections and to belt from pulley to the line shaft.

**Thermometers**—No thermometers are furnished, but when ordered special, we will fit the vat with an angle thermometer inserted through the side. An extra charge of \$7.00 is made for thermometer and fitting.

**Twin Vats**—On special orders we build twin vats. To obtain price, double the list on single vat of half the capacity of the twin machine.

**Straight Drive**—Furnished on special order without extra charge.

**Pulley**—Clutch Pulley 12-inch diameter by 4-inch face. Speed 60 to 80 R. P. M.

**Outlet**—Standard outlet is 3-inch with outside standard pipe thread and fitted with 3-inch enameled perfection gate. Can be connected to sanitary pipe by using No. 32 fitting and a No. 35 reducer. If special or smaller outlet is wanted, machine must be built after order is received.

Gal.	Height Over All Inches	Width Over All Inches	Length Over All Inches	Length Bet. Feet Inches	Approx. Ship. Wt. Lbs.	Price
300	45	53	122	76	2000	\$375.00
400	47	58	128	82	2300	450.00
500	48	61	141	91	2700	535.00
600	48	62	151	99	2900	625.00
700	51	68	152	100	3200	700.00
800	53	69	159	107	3400	795.00

Larger sizes made to order.

**Repairs**—For list of repair parts, consult index.

# The Wizard Agitator

## GENERAL DESCRIPTION

**OUTER JACKET**—It is constructed of the best quality of Gulf cypress; thoroughly dried, being cut from one or two years before it is used; consequently the wood does not shrink or swell to any extent. It is of a very lasting quality and will stand moisture for years without decaying. The material is dressed on both sides; joints are tongued and grooved, and glued. Galvanized iron angle pieces, extending from top to bottom and clear around the end, protect the corners.

**LINING**—The lining is of the best cold-rolled copper, tinned on the inside. It is formed into shape by special machinery and has a perfectly shaped bottom with a 3-inch central channel sloping towards the outlet. The outlet casting is made of bronze, nickel plated and well-pattern, 3-inch in size with an internal flush sanitary brass nipple to which is screwed a 3-inch sanitary, porcelain-enamel-lined, perfection gate.

**COIL**—The spiral coil on regular machines is heavy cold-rolled copper, tinned.

**INSULATION**—The vat and cover are fully insulated. Between the lining and the jacket is placed a sheet of Linofelt. This is used in full sheets with lapped joints and covered with strips of wood, making an air space between the insulating sheets and the lining. Note—Linofelt is an insulating material in general use in first class ice machine refrigeration, and is considered by experts to be one of the most efficient insulating materials known.

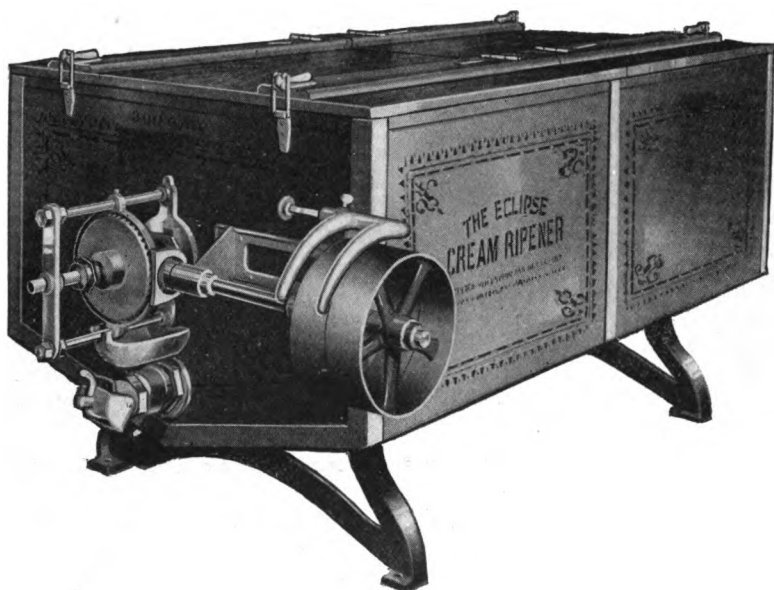
**BEARINGS**—The main bearings through the ends of the jacket are of phosphor bronze of special design so as to make them perfectly sanitary.

**GEARINGS**—The gearing is cut and not cast. Being of spur and worm type they are perfectly noiseless. All castings that pertain either to gearing or other parts of the machine are made interchangeable, and any repairs that may ever be necessary can be promptly secured, and are certain to fit.

**FINISH**—The wooden jacket is finished in the natural grain of the wood. One coat of yellow grain shellac is applied and rubbed to a smooth finish. On top of this, two coats of the best spar varnish are used. The metal parts, including the legs, pulleys, etc., are all galvanized and painted with two coats of aluminum paint.

**SPECIAL FEATURES**—All Wizard Agitators, unless ordered especially, are made with an ice box on the end, of ample size to provide plenty of ice water as the box will hold several hundred pounds of ice. The Agitator is also fitted with sanitary pump, connecting the ice box to the coil so that the ice water may be pumped through the coil and back over the ice, thus using the same water over and over, if necessary. The pump is made entirely independent of the coil and may be stopped or started at will. It is practically noiseless in operation.

## The Eclipse Cream Ripener



Tight and loose pulleys, 12 inch diameter by 3 inch face. Speed 120 R. P. M.

### Specifications

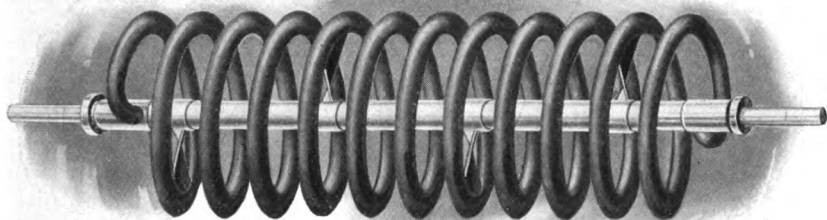
Gal.	Height Over All, Inches	Width Over All, Inches	Length Over All, Inches	Length Bet. Feet, Inches	Approx. Shipping Wt. Lbs.	Price.
300	41	51	102	61	1300	\$275.00
400	43	51	121	65	1450	325.00
500	44	55	129	73	1600	375.00
600	44	60	139	80	1850	415.00
700	45	61	148	87	2100	475.00
800	49	62	148	87	2250	525.00

Self circulating attachment furnished, if wanted at an extra charge.

**Repairs:** For list of repair parts consult index.

# The Eclipse Cream Ripener

## Description



The Eclipse Ripener has a helical pipe coil cooling system. The above illustration is of the coil removed from the vat.

The tubing used is seamless heavy gauge copper tinned inside and outside. It is mounted on a central shaft of double strength cold rolled tubing inside a sleeve of tinned seamless tubing. The coil is thoroughly braced, making an extremely rigid and durable construction. We guarantee it to stand any pressure that is likely to be put upon it under ordinary working conditions.

The water circulation is so arranged that all the cooling water must travel the entire length of the coiled tubing.

The bearings for the coil are in the ends of the vat with packing boxes on the outside. They are made of special design from phosphor bronze.

The coil is driven by bevel gears speeded one revolution of the coil to three revolutions of the driving pulley. Gears are protected by gear-guards and provided with a cast drip pan.

The jacket is made of select Gulf Cypress; the boards are wide, and the joints are tongued and grooved. Heavy angle corner irons are used, also a center band, all fully galvanized. The jacket is fully insulated with Linofelt fastened with narrow wood strips nailed a short distance apart. There is an air space between the insulation and the copper lining.

We use for linings the best cold rolled Lake Copper (the highest grade produced) tinned on one side. The outlet is a special flanged outlet nipple riveted and soldered to the lining and having a shoulder inside and a lock-nut outside the jacket to support it firmly and prevent breaking the lining, a common fault with many vats. The regular size is 3-inch diameter. We furnish a sanitary, porcelain-lined perfection gate.

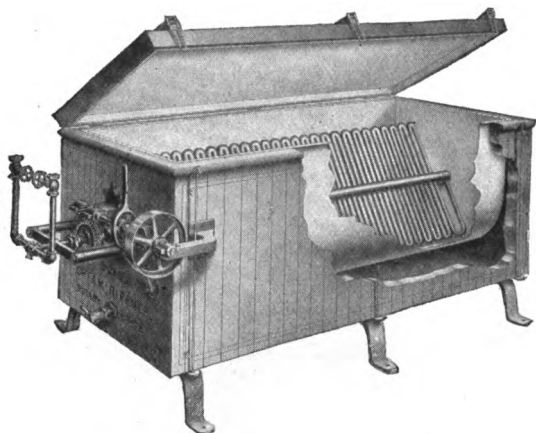
The cover is made of 1-inch material, thoroughly braced, lined with copper, fitted with cam-fasteners which clamp the cover tightly against the cork seal. Covers are double and hinged to a cross piece in the center.

We stand back of every piece of material in the Eclipse Ripener.

We furnish pulleys, wrenches and connections as shown in the illustration, all ready for erection.

All parts of the Eclipse Ripeners are interchangeable so that extras can be supplied at any time.

## Boyd Cream Ripener

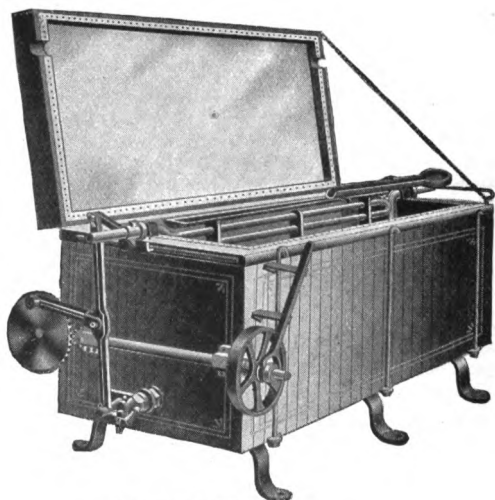


Rotary Coil Style

This is the original cream ripener and the first machine to demonstrate the superiority of mechanical mixing over hand-stirring. We have maintained the high grade construction which made the Boyd famous. The jacket is insulated with several air spaces and the cover clamps down, making the vat when closed, practically air tight. No water circulates around the pan, which is always dry on the outside. We make the Boyd to order only, in either of the styles shown on this page. The linings are made of extra quality, 6-X tin. The cover is also lined. The price list is based on coils of heavy tinned copper.

Coils are rolled and double seamed and fitted with tinned return bands. The water enters at one end and discharges at the other, traversing the entire length of the coil and thus securing the maximum cooling effect.

When ordered special, we can place the outlet on either end. It is often convenient to have the outlet and gearing on opposite ends of the vat. As a vat for holding temperature, the Boyd is excelled by none.



Traveling Coil Style

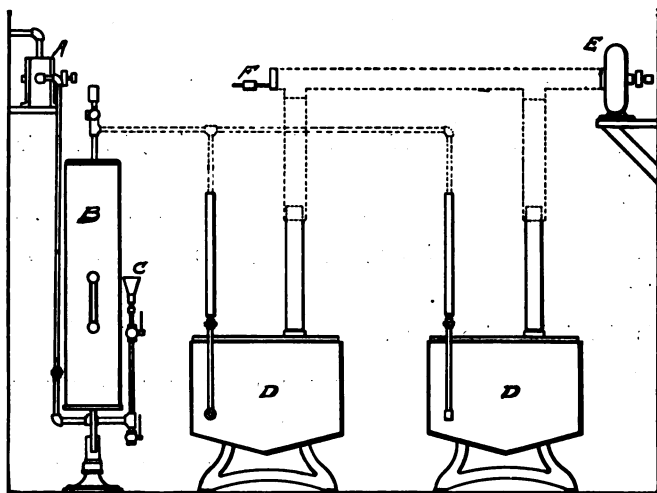
### Price List and Specifications.

CAPACITY			DIMENSIONS OUTSIDE			Height to Cream Inlet	Approximate Weight	Price
Gals. Cream	Pounds Milk	Pounds Butter	Length*	Width*	Height*			
100	7000	315	6' 6"	3' 10"	3' 10"	3' 5½"	930	\$210 00
200	14000	630	9' 0"	4' 2"	3' 10"	3' 6½"	1100	225 00
300	21000	945	12' 2"	4' 2"	3' 10"	3' 5½"	1400	275 00
400	28000	1260	12' 2"	4' 6"	4' 1"	3' 8½"	1700	325 00
500	35000	1575	12' 7"	4' 10"	4' 4"	4' 0"	1800	375 00
600	42000	1880	12' 7"	4' 10"	4' 8"	4' 3½"	1900	400 00

Above list includes copper coils. For tin coils, deduct \$10 from 100 and 200 gallon, and \$15 from other sizes.

\*Dimensions given are for traveling coil style. Rotary coil style takes slightly less floor space over all.

## Cream Aerating Equipment



### For Aerating and Purifying Cream in Ripener

In handling off-flavored cream some means of aerating and purifying is advantageous. The diagram above shows a typical system that has been adopted by many of the leading plants with gratifying results. To secure the greatest benefit from the treatment the aerating should be done while the cream is hot, and it is especially adapted to the plan of pasteurizing in the ripener.

Referring to the letters on the diagram. "A" is a Positive Pressure Blower; "B," a Lime Water Tank with Gauge; "C," Funnel for filling tank; "D," Ripener; "E," Exhaust Fan; "F," Safety Valve. Connection is made to the ripener at one end for a slotted horizontal pipe which extends practically the full length of the ripener. An opening is made in the cover and an exhaust pipe connected thereto leading to the exhaust fan. The exhaust pipe has a slip joint connection so that cover may be raised in usual way.

The operation of the system is as follows: The Lime Water Tank is filled partly with strong lime water. Air is forced through the solution where it is purified, and thence through the connecting pipe and slotted pipe to the cream in the ripener, passing up through the cream, aerating it thoroughly. The exhaust fan creates a slight vacuum above the cream and the undesirable flavors are carried away and outside the building.

### List and Prices of Equipment for One Ripener

For two or more ripeners order one extra of each part marked (\*) for each additional ripener. Price of Tank, Pressure Blower and Exhaust Fan depends on size and make. See other pages for these items.

One lime water tank, complete with gauge glass, inlet funnel, draw-off cock, air inlet pipe and union and cast stand.....		Elbows for exhaust connection, each .....	1.00
One positive pressure blower, capacity about 40 ft. per minute .....		Pipe for exhaust connections, per ft. ....	.25
One exhaust fan.....		Pipe for discharge on exhauster, per foot .....	.25
*Air connection with slotted pipe, each .....	\$25.00	Elbows for discharge on exhauster, each .....	1.00
*Slip joint connection for top of vat fitted with cut-off gate, made of tinned copper, each...	7.50	When this outfit is to be installed on old ripeners it is necessary for the purchaser to put necessary holes in cover and also for the air connection. In ordering, special care should be taken to get the right number of tees, elbows, number of feet of pipe and the total length.	
Safety gate for exhaust connection, each .....	4.00		
Tee joint for exhaust connection, each .....	1.25		

## Pasteurization of Milk

### **Some Fundamentals.**

Pasteurization is a process of destroying vegetating bacteria in milk and its products.

Milk that is thoroughly or perfectly pasteurized is improved in keeping quality and the possibility of carrying the germs of contagious disease is eliminated.

Heat is the destructive agent.

The temperature to which the milk is heated and the period of exposure determine the thoroughness of the process.

The higher the temperature for a given length of time, and contrariwise, the longer the exposure at a given temperature, the more thorough the germ destruction will be.

As a practical proposition, however, both time and temperature are limited by the consumer's requirement that cream shall rise as quickly and completely on pasteurized as on unpasteurized milk.

At high temperatures the character of the milk is changed. The albumen is coagulated, the cream does not rise normally and the milk is less wholesome and less digestible.

To meet every requirement all pathogenic bacteria must be destroyed and at the same time the natural condition of the milk must not be changed. It has been demonstrated that heating to 140 degrees F. and holding for 30 minutes accomplishes the desired result and we recommend this process.

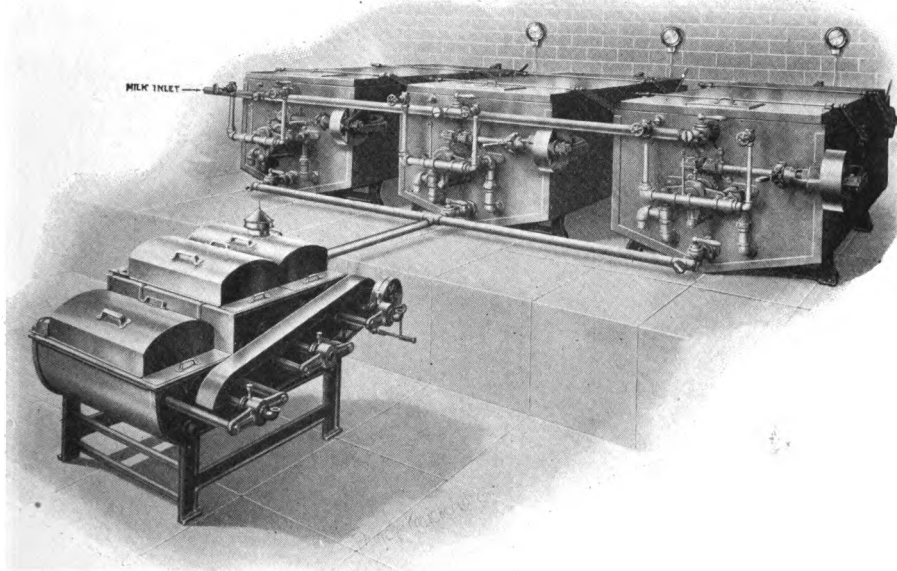
### **A Complete Line of Equipment.**

The Wizard pasteurizing and holding equipment illustrated and described in the following pages accomplishes the desired result economically and positively. It is based upon the operating principle of heating a quantity of milk as a unit, holding at pasteurizing temperature for a predetermined period, then cooling rapidly. The equipment is made for both the intermittent and continuous plans of operation and the equipment and system used should be governed by the conditions to be met. We furnish equipment for all sizes of plants from the private dairy up to the largest city pasteurizing plant. The pasteurizing efficiency is the same for all sizes.



## Wizard Pasteurizing, Holding and Cooling Machines

For Continuous Operation



The equipment above illustrated comprises pasteurizing, holding and cooling machinery as arranged for continuous flow of pasteurized milk from cooler to bottle filler. With this equipment a very large hourly capacity is obtained without sacrifice of the principles of positive pasteurization.

The three Wizards are connected to a single inlet header and also to a discharge header and are arranged to heat and hold the milk and to discharge into the three-compartment cooler. The vats work in rotation. In operating, the first vat is filled and heated, the heating starting practically as soon as the filling begins. As it fills, it also heats, and when full, the entire contents of the vat are heated nearly to pasteurizing temperature. When the first vat is filled the milk is turned into the second, meanwhile the heating in the first is finished and the heating in the second starts. The first vat is holding while the second is filling and heating and the second is holding while the third is filling. While the third is filling the first is emptying and once the hot milk begins to flow to the cooler the operation is continuous. Thus the heating and holding processes are intermittent and positive, while the cooling and bottle filling are continuous. Little or no time is lost as compared with other holding machines, the only difference being the few minutes required to fill and heat the first vat of milk.

### **Certainty and Uniformity.**

This system of pasteurization guarantees that all milk treated is heated to the proper temperature and held for the required time. The disc coils

## The Wizard Pasteurizing, Holding and Cooling Machines—Con't

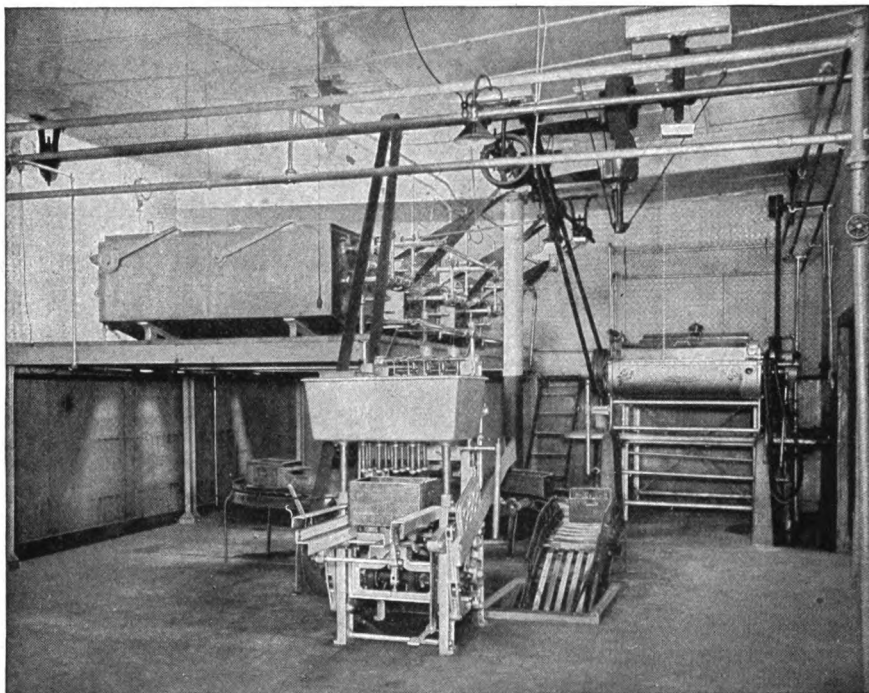


Illustration from photograph of a 6,000 lb. Wizard Positive Pasteurizing, Holding and Cooling Equipment, and Automatic Filler and Capper.

mix the milk thoroughly and heat it uniformly. Cream cannot rise during the process and the fat test is uniform. There is no scorching.

### **Perfect Cream Line.**

The cream line on milk treated by this system is equal to the best. The rapid cooling brings up the cream quickly and fully. The heating being uniform and the fat being held in emulsion in the vats, the cream is of uniform depth at all times during the run.

### **Quality of Product.**

We have shown how the milk is uniformly treated during pasteurization, insuring a perfectly pasteurized and uniform product. Of as great importance is the fact that the milk is not subjected to violent agitation in passing through the machine but is carried by easy steps from heating vat inlet to the bottle filler. There is no concussion or churning to produce foam, oiliness or other defects.

### **Sanitation.**

Milk is not exposed to the air from inlet to outlet. Vats are covered. Sanitary pipes carry the milk to the vats, from vats to cooler and every requirement of sanitation is complied with.

## **The Wizard Pasteurizing, Holding and Cooling Machines—Con't.**

### **Operating Advantages.**

Less labor is required to operate than with any other type of pasteurizer. No pumps are required, and the pipe lines are short, straight and simple. The operator need not watch the machine constantly. With a steady supply of steam it requires but a moment's attention to each vat when the pasteurizing temperature is approached.

### **Heat Regulators Not Necessary.**

With this equipment thermostatic regulators are not required. Recording thermometers furnish all necessary information. The milk is handled in batches; when a batch is hot it is all hot. The dial of the recorder shows the temperature at all times; it tells the operator when to shut off steam, how long it has been held and when to empty. The charts from the recorder also give a complete and permanent record of the work for the superintendent, manager or inspector. No other type of pasteurizer provides so simply for control of the process.

### **Ease of Cleaning.**

Simplicity in all points makes the Wizard remarkably easy to clean. The heating and holding vats have "lift-up" covers which are easily raised, exposing the interior to view. The surfaces are easily washed and sterilized. All parts are accessible and are cleaned in position, no cranes, derricks or tackles being required. The entire outfit can be cleaned in much less time than any other of equal capacity and doing the same work.

### **Space Required.**

But little, if any, more floor space is actually required than with the usual type of continuous pasteurizer and cooler with retarder or holding device in connection. No pumps are required, nor auxiliary apparatus such as cranes or tackle blocks. The machines are compact, require little head room and it is not necessary to have much free space around them.

### **Construction.**

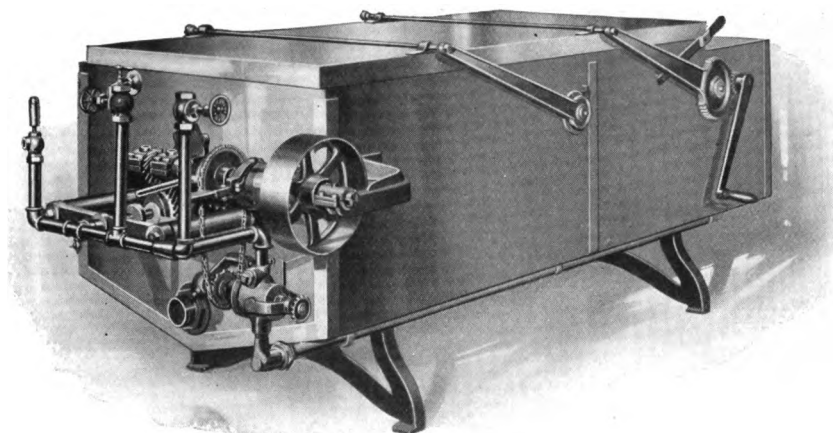
The vats are similar to our Wizard Agitators, modified in design to suit the service. The jackets are covered with tinned copper, no wood being exposed, and present an attractive appearance and, furthermore, are sanitary both inside and out. The cooler is of the disc type, having coils for well water and brine. It is all metal and constructed for service. Piping is our regular sanitary piping with nicked brass fittings. The equipment is of the best in every respect.

### **Sizes and Capacities.**

This equipment can be furnished in any capacity desired, from 1,000 lbs. up to 15,000 lbs. per hour. The size and arrangement best adapted varies, and we should have full information as to the work to be done, upon receipt of which we will recommend the proper equipment and furnish all necessary specifications and quotations.

# The Wizard Pasteurizer

Type "E"



**Single Unit for Heating, Holding and Cooling**

The above is an illustration of our type E Wizard Pasteurizer with metal covered jacket, and is intended to give plants handling a moderate quantity of milk a thoroughly satisfactory positive pasteurizer at a minimum cost. We can furnish this machine with jacket covered with either galvanized iron or copper. With this machine the entire operation of pasteurizing is performed without removing the milk from the vat. The disc coil serves as a heating coil, agitating coil and cooling coil. At the further end of the vat is an ice box having capacity for a large quantity of ice, enabling the machine to cool very rapidly.

**Regular Equipment.**—The regular machine includes the circulating pump, jet for pasteurizing, copper lined ice box, high grade angle thermometer fitted to vat, wrenches, also valves and piping as shown in cut. It is ready for use without any extras whatever, it being only necessary to make steam and water connections and to belt from pulley to the line shaft. Clutch pulley is 12 inches diameter by 4-inch face. Speed 60 to 80 R. P. M.

When ordered special we can furnish the pasteurizer with a 12x18 strainer in the cover at an extra charge. The regular outlet is 3 inches, fitted with a 3 inch enameled gate. If a special size or smaller outlet is wanted it must be so specified on your order. Generally speaking the standard outlet can be reduced down with our regular sanitary pipe and fittings to any size wanted.

**Coolers.**—If faster cooling is desired, a cooler of the proper capacity may be selected from the list on page 60, and when pasteurizing and holding is finished, the milk can be sent through the cooler and bottling started immediately.

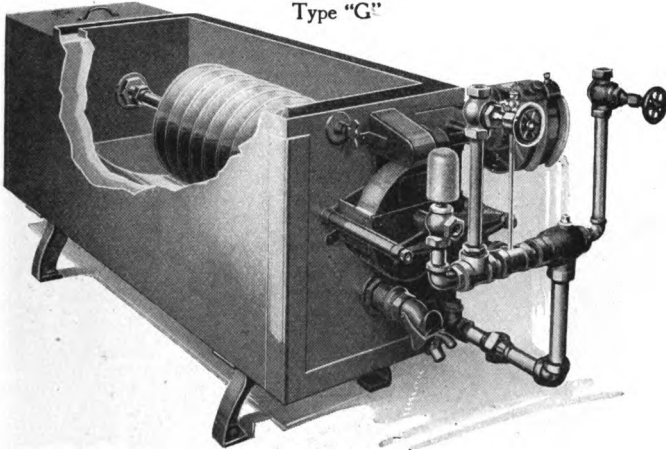
## Specifications

Gal.	Height Over All Inches	Width Over All Inches	Length Over All Inches	Length Bet. Feet Inches	Approx. Ship. Wt. Lbs.	PRICES ON APPLI- CATION
100	40	43	92	40	1450	
200	44	49	108	56½	1750	
300	45	53	122	76	2050	
400	47	58	128	82	2400	
500	48	61	141	91	2700	
600	48	62	151	99	3000	

12x18 inch Strainer in cover, \$5.00 extra. Recording Thermometer, see separate list of thermometers.

# The Wizard "Dairy" Pasteurizer, Ice Cream Mixer and Starter Vat

Type "G"



The machine illustrated above is especially adapted for pasteurizing in farm dairies and wherever small amounts are handled. It may also be used as an ice cream mixer or starter vat. It is a strictly high grade machine and is constructed exactly the same as the larger capacity machines. The coil is of the spiral disc type, but is of smaller diameter than the large machines. The wood jacket is covered with tinned copper. Lining and cover are also of tinned copper, and the vat bottom is rounded and the ends slope at the bottom so that a much smaller amount of milk can be handled than the listed capacity. Each machine has an ice box on the end, and is in all respects complete. The coil is of the self-circulating type and draws water from the ice box through the coil and returns to box without the use of a pump. The outlet is fitted with  $1\frac{1}{2}$  inch sanitary perfection gate.

We call special attention to the high character of this pasteurizer in point of construction; also to the fact that with an intermittent pasteurizer the results are uniform and the pasteurization is thorough. This machine is complete for heating, holding and cooling, and brings positive pasteurization within the reach of every dairyman.

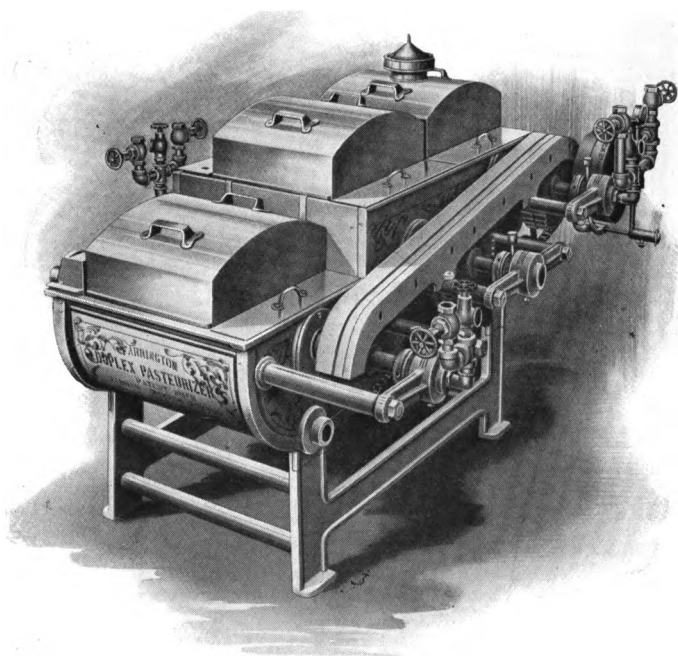
**Boiler Capacity Required.**—This machine may be operated with a small upright boiler. The size necessary depends upon the quantity pasteurized, the initial temperature, the length of time in heating. Milk pasteurized, starting at animal heat, will require only about half as much steam and fuel as when it has been previously cooled to fifty. Also milk heated in 30 minutes will only take half the boiler capacity as when the heating is done in 15 minutes. All these factors must be taken into consideration in selecting a boiler.

The figures given in table are the boiler capacity required with pasteurizer working at full listed capacity with milk at 50 deg. initial temperature, heating to 150 in 20 minutes.

Specifications					
Dimensions Over All.			Boiler Required.	Price.	
Size.	Length.	Width.			
25 gal.	75 in.	25 in.	2 H. P.	\$110.00	
50 gal.	82½ in.	29 in.	4 H. P.	135.00	

Price includes tinned copper cover with fine mesh copper wire strainer. On special orders we can furnish a water circulating pump at an additional charge of \$10.00.

# The Farrington Duplex Pasteurizer and Cooler



Three Compartment—For Cream or Milk

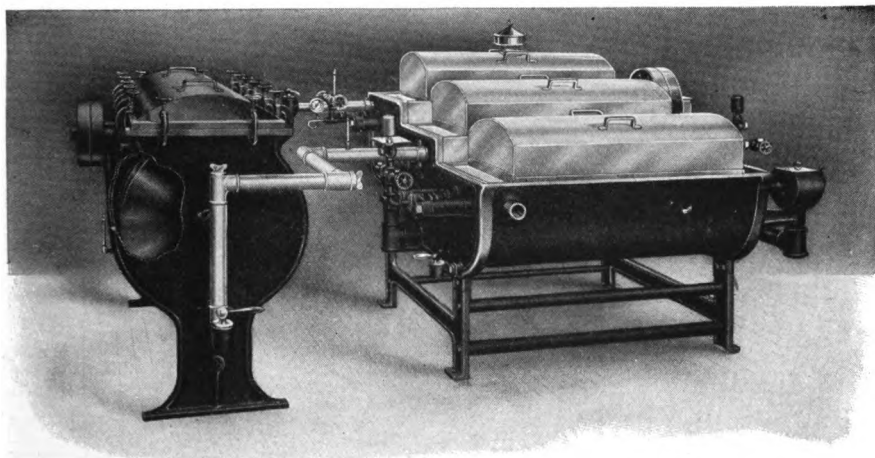
Several years of experience with this machine warrants us in saying that for general milk plant and creamery work it fulfills every requirement. The improved model illustrated above has many refinements not found in the original machines. The machine has one heating and two cooling compartments. Where low temperatures are desired, the middle compartment is connected with water and the final cooling done in the last compartment with brine from a refrigerating machine or made from ice and salt. Where especially low temperature is not desired, both cooling coils may be connected with water. Machine is complete with covers, float valve on inlet, feed regulating device, all necessary steam and water valves, safety valves, steam gauge and wrenches. T and L pulleys, 12x2 in., 150 R. P. M.

## Specifications

Size No.	Capacity lbs per hour	Total Length	Total Width	Total Height	Height to Inlet	Height to Outlet	Shipping Weight
0	1000	72"	60"	54"	36"	19"	2200
1	1500	72"	65"	54"	36"	19"	2400
2	2000	72"	72"	54"	36"	19"	2500
3	3000	72"	84"	54"	36"	19"	3000
4	4000	72"	96"	54"	36"	19"	3300

Prices on application.

## The Farrington Retarder



The Retarder is shown at the left in the above illustration, connected to a Farrington Pasteurizer. The purpose of the Retarder is to retain the milk or cream at the highest temperature for a longer period before passing to the cooling section. In practice the milk is retained for twenty to thirty minutes depending upon whether the pasteurizer is operated at rated capacity or crowded; the Retarders are rated as to capacity upon the basis of holding thirty minutes. The Retarder may be attached to a pasteurizer already installed.

By the use of the Retarder the advantages of both the continuous and intermittent types of pasteurizer are secured; the rapidity and capacity of the former and the thorough pasteurization of the latter. Efficient work can be done at a lower temperature, thus saving both steam and water.

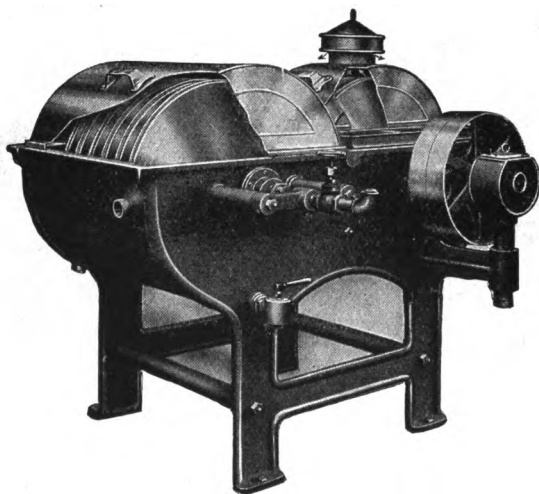
The Retarder consists of a double jacketed cylindrical tank or vessel, the size of which varies with the capacity of the machine. Within the tank a series of revolving discs of metal, each about 3-16 inch thick, and spaced about five inches apart serve to retard the flow of milk and insure an even flow from inlet to outlet.

The Retarder is made in the following capacities per hour:

1000 lbs.	3000 lbs.	6000 lbs.
1250 lbs.	4000 lbs.	8000 lbs.
2000 lbs.	5000 lbs.	10000 lbs.

Prices on Application.

## The Farrington Duplex Pasteurizer and Cooler



**Two Compartment—Straight Pattern—For Cream**

This is the standard machine for creamery use. Its low price and medium capacity makes it a very desirable machine for whole milk and medium gathered cream plants. It is made with either steel or copper discs as preferred. In most separator creameries the pasteurizer can be so installed that the cream will flow through the machine and deliver to the cream vat without the use of pumps. Machine is complete as shown and includes two covers, displacement cans in heating section. Steam and water valves, steam gauge and spanner wrench. T and L pulleys 14x2 in. 50 R. P. M. This type of machine can also be furnished steam turbine drive for use in plants having no engine.

### Specifications

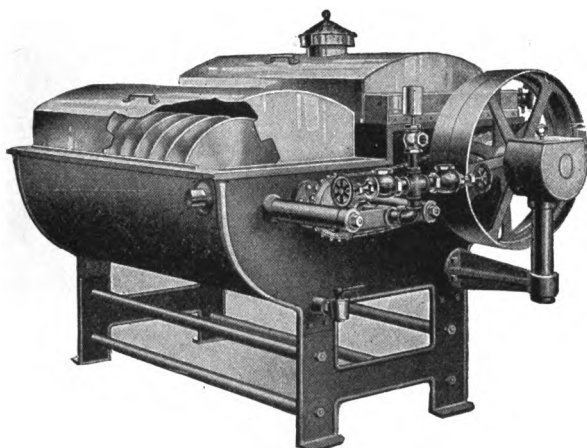
Size No.	Capacity lbs. per hr.	Total Length.	Total Width.	Total* Height	Height† Inlet.	Height Outlet.	Diam. Inlet & Outlet.	Steam & Water Connections.	Shipping Weight, lbs.
A	500	48"	49"	31"	28"	27"	1½"	¾"	900
B	800	48"	53"	31"	28"	27"	1½"	¾"	1000
C	1000	48"	56"	31"	28"	27"	1½"	¾"	1050

\*Add 14 inches for height to top of cover.

†Add 9 inches for total height to top of inlet cup. Machine can be used without cup if desired. Prices on application.



# The Farrington Duplex Pasteurizer and Cooler



## Two Compartment—Step Pattern—For Milk and Cream

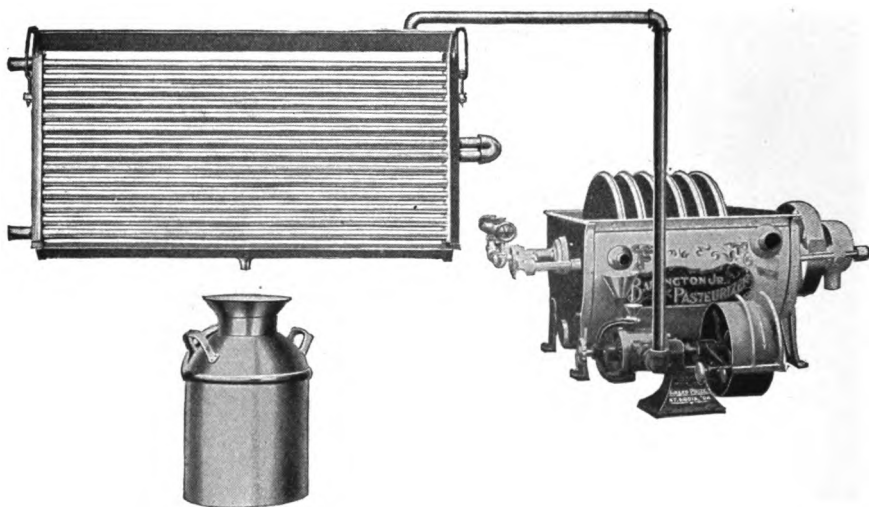
This machine is generally used for pasteurizing cream for buttermaking. It does not have the cooling capacity of the three compartment machine, *i. e.* it will not cool so low, but with ordinary well water will cool to ripening temperature which is all that is usually required for this class of work. The machine is identical with the three compartment pasteurizer in style, finish and equipment. Complete with two covers, displacement cans, float inlet valve, steam gauge, safety valve, steam and water valves and spanner wrench. T and L pulleys 20x2½ in. 50 R. P. M. Steam and water connections all ¾ in. Milk inlet and outlet connections standard pipe thread.

## Specifications

Size No.	Capacity lbs. per hr.	Total Length	Total Width	Total* Height	Height to Inlet	Height to Outlet	Diam. Inlet	Diam. Outlet	Shipping Weight
D	1500	48"	55"	36"	32"	28"	1 "	2 "	1500 lbs
E	2000	48"	60"	36"	32"	28"	1 "	2 "	1700 "
F	3000	48"	72"	36"	32"	28"	1½"	2½"	2000 "

\*Add 14 inches for total height to top of cover.  
Prices on application.

## Farrington Junior Pasteurizer



The heating section is identical with the Duplex and gives the same thorough pasteurization, the same perfect aeration and consequently improved product and the same economy of steam.

The cooler is of the tubular type with seamless copper tubes. The cooling surface for each size outfit is ample to insure thorough cooling without waste of water. If very low temperature is desired it can easily be transformed into a double waterway cooler, running ice water or brine through the lower section.

To elevate the cream to top of cooler we use a sanitary pump. With this pump the cooler may be raised high enough to permit running the cream directly into the ripening vat, thus doing away with all lifting.

The cream can be pumped from the pasteurizer to any distance desired, then cooled and run into the ripener; very desirable in plants where ripeners are located on the second floor or in a room separate from the separating and pasteurizing room.

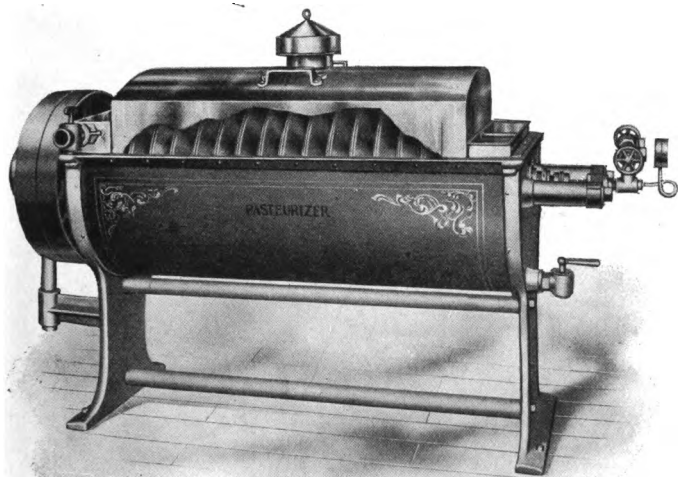
The Farrington Junior is not of course as compact as the Duplex, but in every other essential point we guarantee it to be fully equal.

### Capacities and Specifications

Capacity lbs. per hr.	Heater		Cooler		Approx. Shipping Wt. Complete.
	Total Length	Total Width	Total Length.	Total Height.	
1,000	48 in.	24 in.	65 in.	35 in.	800 lbs.
1,500	52 in.	24 in.	91 in.	35 in.	900 lbs.
2,000	55 in.	24 in.	65 in.	58 in.	1000 lbs.
2,500	60 in.	24 in.	75 in.	58 in.	1160 lbs.

Prices on application.

## The Farrington "Special" Pasteurizer



Also Furnished as a Cooler

This type of machine is largely used in milk shipping station work. It is identical in all respects with the first, or heating section of the regular three compartment pasteurizer. The machine is complete as shown with steam gauge, displacement cans, float valve inlet, cover, steam and water valves and spanner wrench. T and L pulleys 20x2½ in. 50 R. P. M. Steam and water connections ¾ in. Milk inlet and outlet connections are standard pipe thread, but can be furnished for sanitary pipe connections.

### Specifications.

Capacity lbs. per hr.	Total Length	Total Width	Total Height*	Height to Inlet	Height to Outlet	Diam. Inlet	Diam. Outlet	Ship'g Weight
1000	48 in.	24 in.	80 in.	32 in.	27 in.	1 in.	1½ in.	1000 lbs.
2000	60 in.	24 in.	80 in.	32 in.	27 in.	1 in.	2 in.	1200 lbs.
3000	72 in.	24 in.	80 in.	32 in.	27 in.	1¼ in.	2½ in.	1400 lbs.
4000	84 in.	24 in.	80 in.	32 in.	27 in.	1¼ in.	2½ in.	1900 lbs.
5000	94 in.	24 in.	80 in.	32 in.	27 in.	1¼ in.	2½ in.	2000 lbs.

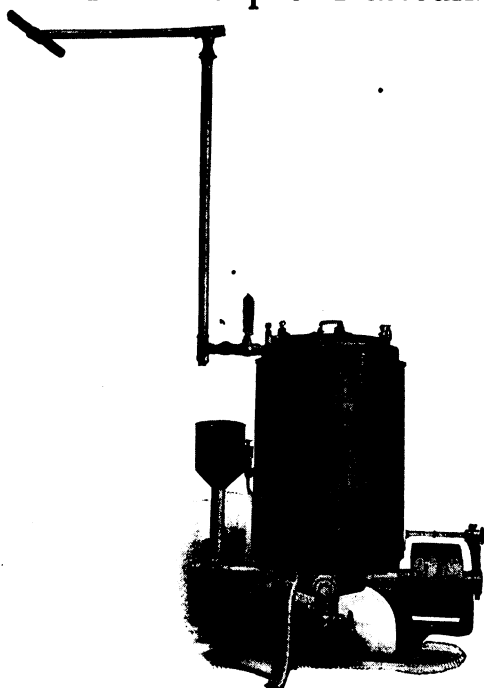
\*Add 14 inches for total height to top of cover.

Prices on application.

### FARRINGTON "SPECIAL" COOLER.

By substituting a brine or water cooling coil for the regular heating coil this machine makes a most satisfactory cooler. It can often be used to increase the capacity of a pasteurizer or another cooler and can be installed without disturbing the apparatus already in place. The milk outlet is only 5 inches lower than the inlet and the machine can be installed between the present cooler and the bottle filler without using a pump. This is more convenient than to add a section of tubes to the present cooler, as often there is not sufficient headroom to permit of the added height of cooler. The capacity as a cooler depends upon the operating conditions, temperature to be cooled to, kind of cooling medium, etc. Upon receipt of complete information regarding the service to be performed, we will recommend the proper size machine and quote prices.

# The Eclipse Pasteurizer



## SPECIFICATIONS AND PRICES

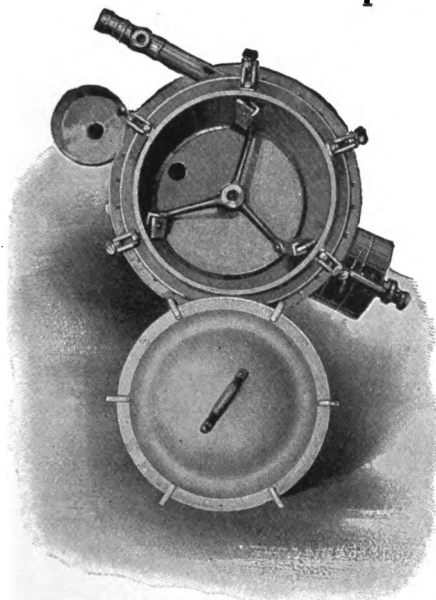
### Style A—For Milk and Sweet Cream

No.	Capacity Lbs. Per Hour	Height to Inlet	Height to Outlet	Will Elevate	Diam.	Pulleys Diam. and Face	Speed R. P. M.	Ship. Weight Lbs.	Price Pasteur- iser Only	Elevating Tube Extra
A-1	1000	20"	24"	36"	14"	8x3	500	180	\$140.00	\$12.50
A-2	1500	20"	28"	40"	14"	9x3	500	195	175.00	12.50
A-3	2500	29"	33"	45"	16"	9x3	450	235	225.00	15.00
A-4	4000	29"	40"	50"	16"	9x3	450	270	275.00	15.00
A-5	6000	33"	39"	60"	22"	10x3½	400	400	325.00	20.00

### Style B—For Sour Cream

B-1	1000	20"	25"	36"	16"	8x3	500	180	\$140.00	\$12.50
B-2	1500	20"	29"	40"	19"	9x3	500	195	175.00	12.50
B-3	2500	29"	34½"	45"	19"	9x3	450	235	225.00	15.00
B-4	4000	29"	40½"	50"	19"	9x3	450	270	275.00	15.00
B-5	6000	33"	43"	60"	22"	10x3½	400	400	325.00	20.00

## The Eclipse Pasteurizer



Inside View of Style "B"

face and keep it clear when handling cream high in acid.

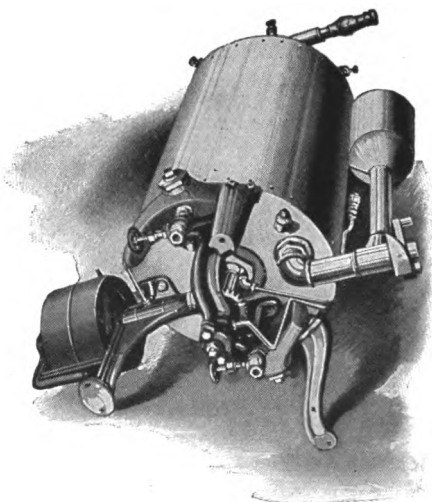
We call particular attention to the substantial construction of the Eclipse. The frame construction is heavy and the gears are supported by a bracket. Gears are cut. All bearings are of bronze; central shaft runs on ball and discs in an oil well.

Cover is made of a solid brass casting and nickel plated. Cover fasteners are simple and cannot get out of order.

The pulleys are of large diameter and wide face.

Inlet cup and connections are included with each machine as shown in cut. Elevating pipes are not included except where ordered. When ordered, we furnish sanitary, tinned copper piping with sanitary fittings ready for attaching to pasteurizer and so made up that it can be quickly taken down and thoroughly cleaned. Do not confuse this piping with the so-called sanitary piping furnished with some pasteurizers. With our piping every part of the inner surface can be reached with a brush.

The pasteurizing equipment is not complete without a cooler. We manufacture all sizes. From our complete list on another page of this catalog a cooler may be selected of such capacity and dimensions as to give the largest degree of economy.



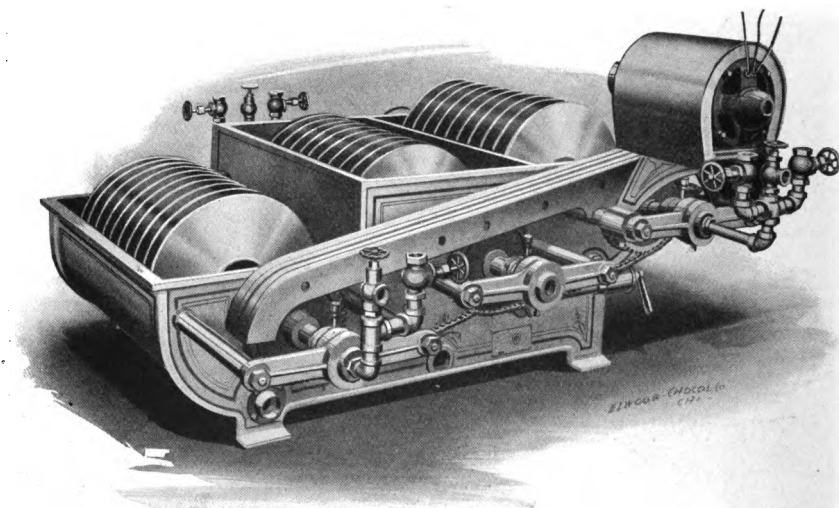
Bottom View of Style "B"

The combination of large capacity, high quality and reasonable price is found in the Eclipse Pasteurizer.

It will elevate hot milk or cream several feet above the machine—high enough to run over a tubular cooler and into a ripener without using a separate pump.

We build it in two styles as listed on the previous page. Style "A" is made for sweet milk and cream; style "B" for sour cream, though it will handle sweet cream as well. Style "A" heats from a water jacket. Style "B" is made to heat with either hot water, dry live steam or exhaust steam as preferred. The principal difference aside from the heating system is in the impeller. Style "A" has a flat blade impeller, the blades clearing the wall of the heating cylinder. Style "B" has an impeller fitted with a scraper similar to the dasher on an old style ice cream freezer, the purpose of which is to scrape the heating sur-

## Rotating Disc Coolers



Made in 3-Compartment, 2-Compartment and Single.

The above is an illustration of a special cooler as furnished with Wizard Pasteurizing and Holding Device illustrated on page 47, but with short legs and electric motor for direct drive. The regular coolers are for belt drive. The motor on this machine is mounted on a special bracket attached to the frame of the cooler and connected to the drive shaft by a silent chain.

We build these coolers in sizes to correspond with the Wizard Pasteurizing and Holding Machines. They are in general the same as Farrington Duplex 3-compartment Pasteurizers, except that all coils are cooling coils, the first two for water and the third for brine. With this combination the maximum cooling with water is secured and the more expensive brine cooling is reduced to the minimum.

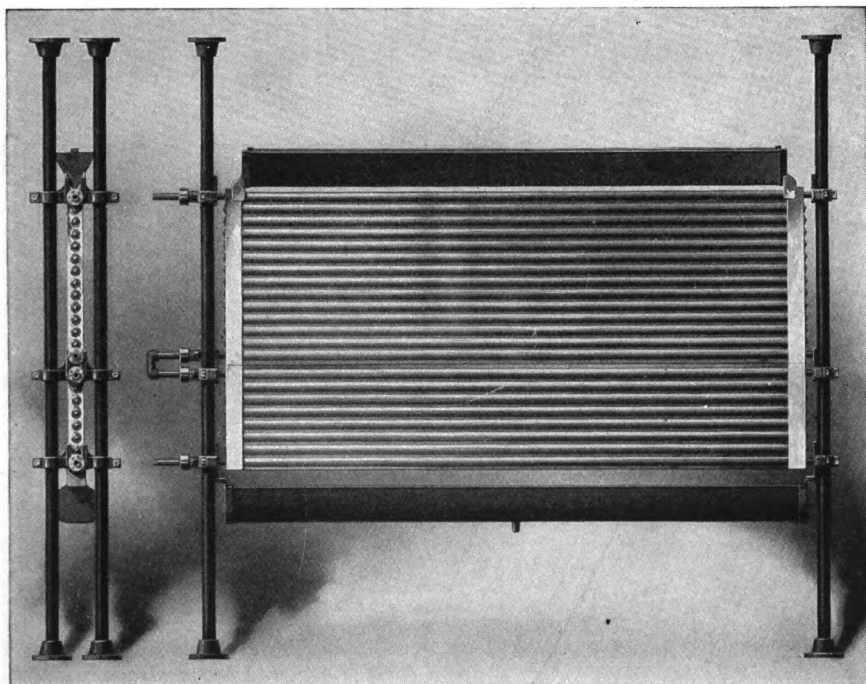
In addition to the 3-compartment cooler illustrated we make this type with two compartments and in single compartment, the last similar to the Farrington Special Pasteurizer illustrated on page 57. Any style can be furnished to order—with short legs as shown above, regular length as for pasteurizer, and with extra long legs for elevating the cooler to proper height for discharging into filler, etc.

One prominent advantage of this type of cooler is that a large capacity can be secured without material loss of head; for example, on the 8,000 lb. 3-compartment cooler, the outlet is only 18 inches lower than the inlet, which makes possible a convenient arrangement of apparatus and in many cases makes unnecessary the use of a pump.

### Information and Specifications

Owing to the wide variations in conditions under which these coolers are operated, we do not publish a list of capacity ratings, but request that interested parties give us full information as to the service desired, including (1) initial temperature of milk or cream, (2) temperature to be cooled to, (3) temperature of water, (4) temperature of brine, (5) any special requirements as to elevation, etc. Upon receipt of the information we will be pleased to submit our recommendation as to size machine needed and quote prices.

## Alaska Tubular Coolers



These coolers are of the continuous surface type; the space between the tubes is filled by tinned brass strips soldered to the tubes.

They are made up in sections of from six to fourteen tubes high and in lengths of four to sixteen feet.

The construction throughout is of the very highest grade. The tubes are cut from special seamless copper tubing heavily tinned and will withstand all the pressure that will ever be put upon them. Opposite either end of each tube is a brass screw-plug which may be quickly removed for cleaning the interior of the tube. This should be done occasionally to keep the cooler up to its maximum efficiency.

The heads are also of brass heavily tinned. With each cooler is furnished copper troughs for top and bottom, also cooler and trough brackets, but no pipe supports.

We list 126 regular sizes as shown in the accompanying lists, giving a range of capacity of from 450 lbs. to 11200 lbs. per hour, the capacity being based on an allowance of 20 square feet per 1000 lbs. per hour. This list provides for all ordinary requirements, but we can make other combinations to meet any unusual specifications.

We can also furnish tinned steel troughs with coolers, if wanted, although the copper troughs are much more durable and on that account alone are well worth the slight additional cost.

# "Alaska" Tubular Coolers

Continuous Surface. Tubes 2" Diameter. Brass Headers. Copper Troughs

LENGTH OF TUBES			6 FEET		8 FEET		10 FEET	
No. of Tubes	Sections	Total Height	Lbs. Per Hour	Price	Lbs. Per Hour	Price	Lbs. Per Hour	Price
6	1	26"	900	\$195 00	1200	\$210 00	1500	\$230 00
8	1	30½"	1200	225 00	1600	245 00	2000	265 00
10	1	35¼"	1500	250 00	2000	275 00	2500	300 00
12	1	40"	1800	280 00	2400	305 00	3000	330 00
14	1	44½"	2100	310 00	2800	340 00	3500	370 00
16	2	49"	2400	360 00	3200	400 00	4000	440 00
18	2	53¾"	2700	390 00	3600	430 00	4500	475 00
20	2	58¼"	3000	420 00	4000	465 00	5000	510 00
22	2	63"	3300	450 00	4400	495 00	5500	545 00
24	2	67½"	3600	480 00	4800	525 00	6000	575 00
28	2	76¾"	4200	530 00	5600	585 00	7000	640 00

LENGTH OF TUBES			12 FEET		14 FEET		16 FEET	
No. of Tubes	Sections	Total Height	Lbs. Per Hour	Price	Lbs. Per Hour	Price	Lbs. Per Hour	Price
6	1	26"	1800	\$250 00	2100	\$265 00	2400	\$285 00
8	1	30½"	2400	285 00	2800	305 00	3200	325 00
10	1	35¼"	3000	320 00	3500	345 00	4000	365 00
12	1	40"	3600	355 00	4200	385 00	4800	410 00
14	1	44½"	4200	400 00	4900	430 00	5600	455 00
16	2	49"	4800	480 00	5600	520 00	6400	555 00
18	2	53¾"	5400	515 00	6300	555 00	7200	600 00
20	2	58¼"	6000	550 00	7000	595 00	8000	640 00
22	2	63"	6600	580 00	7700	635 00	8800	680 00
24	2	67½"	7200	625 00	8400	675 00	9600	725 00
28	2	76¾"	8400	695 00	9800	750 00	11200	805 00

Above prices are for complete coolers including troughs and brackets, also double water-way connections for double section coolers.

## Price List of Parts

Copper Troughs	Total Height	6 Ft.	8 Ft.	10 Ft.	12 Ft.	14 Ft.	16 Ft.
Upper.....	5½"	\$20 00	\$24 00	\$28 00	\$32 00	\$34 00	\$40 00
Lower.....	6½"	27 00	31 00	34 00	37 50	41 50	45 00

Trough Brackets, per pair.....\$ 4.50  
Cooler " " ..... 4.50  
Pipe Fittings complete for double water way. .... 20.00

Supporting Standards should be 1¼" iron pipe, galvanized, not included in price of coolers  
Prices on this page subject to discount.



# "Alaska" Tubular Coolers

Continuous Surface. Tubes  $1\frac{1}{2}$ " Diameter. Brass Headers. Copper Troughs

LENGTH OF TUBES			4 FEET		5 FEET		6 FEET	
No. of Tubes	Sec-tions	Total Height	Lbs. Per Hour	Price	Lbs. Per Hour	Price	Lbs. Per Hour	Price
6	1	$18\frac{3}{4}$ "	450	\$ 82 00	550	\$ 94 00	675	\$101 00
8	1	$22\frac{1}{4}$ "	600	97 00	750	109 00	900	121 00
10	1	$25\frac{3}{4}$ "	750	107 0	925	121 0	1125	141 0
12	1	$29\frac{1}{4}$ "	900	122 00	1125	139 00	1350	156 00
14	1	$32\frac{3}{4}$ "	1050	162 00	1300	174 00	1575	191 00
16	2	$36\frac{1}{4}$ "	1200	172 00	1500	189 00	1800	211 00
18	2	$39\frac{3}{4}$ "	1350	187 00	1675	209 00	2025	231 00
20	2	$43\frac{1}{4}$ "	1500	202 00	1850	224 00	2250	246 00
22	2	$46\frac{3}{4}$ "	1650	212 00	2050	239 00	2475	266 00
24	2	$50\frac{1}{4}$ "	1800	227 00	2250	254 00	2700	286 00

LENGTH OF TUBES			7 FEET		8 FEET		9 FEET	
No. of Tubes	Sec-tions	Total Height	Lbs. Per Hour	Price	Lbs. Per Hour	Price	Lbs. Per Hour	Price
6	1	$18\frac{3}{4}$ "	775	\$113 00	900	\$125 00	1000	\$137 00
8	1	$22\frac{1}{4}$ "	1050	128 00	1200	140 00	1350	152 00
10	1	$25\frac{3}{4}$ "	1300	153 00	1500	165 00	1675	177 00
12	1	$29\frac{1}{4}$ "	1575	173 00	1800	190 00	2025	202 00
14	1	$32\frac{3}{4}$ "	1875	208 00	2100	225 00	2350	242 00
16	2	$36\frac{1}{4}$ "	2100	228 00	2400	245 00	2700	267 00
18	2	$39\frac{3}{4}$ "	2350	248 00	2700	270 00	3025	292 00
20	2	$43\frac{1}{4}$ "	2600	268 00	3000	295 00	3350	317 00
22	2	$46\frac{3}{4}$ "	2875	288 00	3300	315 00	3700	342 00
24	2	$50\frac{1}{4}$ "	3150	313 00	3600	340 00	4050	367 00

Above prices are for complete coolers including copper troughs and brackets, also double waterway connections for double section coolers.

## Price List of Parts

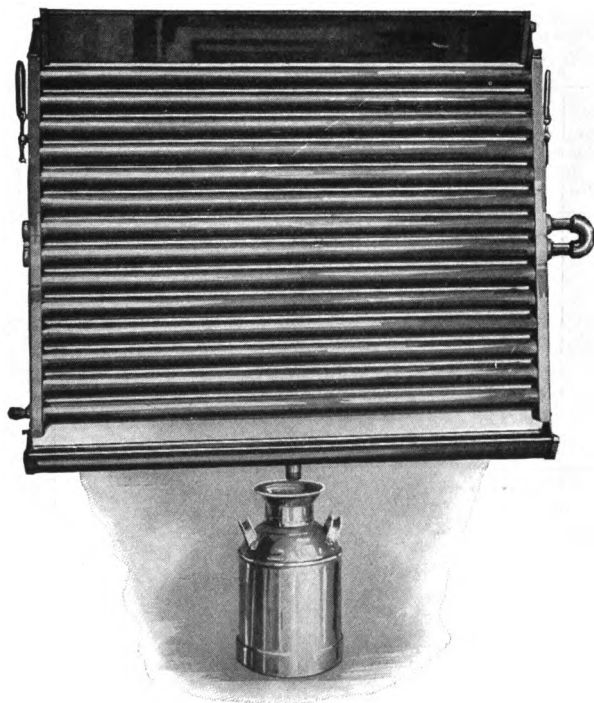
Copper Troughs	Total Height	4 Ft.	5 Ft.	6 Ft.	7 Ft.	8 Ft.	9 Ft.
Upper.....	4"	\$11 00	\$12 00	\$13 00	\$16 00	\$18 00	\$20 00
Lower.....	$4\frac{1}{2}$ "	13 00	16 00	18 00	20 00	22 00	24 00

Trough Brackets, per pair ..... \$2.00  
Cooler " " ..... 2.00  
Pipe Fittings complete for double waterway. .... 6.50

Supporting Standards should be  $1\frac{1}{4}$ " iron pipe, galvanized, not included in price of coolers.

Prices on this page subject to discount.

# Farrington Junior - Tubular Milk and Cream Coolers



Tubular Coolers are built of rolled tubes, either tinned steel or tinned copper, which are securely fastened in iron heads fitted for iron pipe connection. The water used for cooling enters the coil at the base and passes up through the inside of the tubes. Both troughs are removable and made with brass supports.

The above cut shows the cooler with a return elbow connecting the upper and lower sections, making it a single waterway cooler; the return elbow may be removed and lower section used for ice water, and by using a pump to keep the ice water in circulation, milk may be cooled to 40 degrees Fahrenheit by the use of a comparatively small quantity of ice.

Size	Capacity Per Hour Pounds	Size Tubes Inside	No. Tubes	Length Over All	Height Over All	Shipping Weight Pounds	Steel Tubes	Copper Tubes
A.....	600	1½"	14	44"	36"	225	\$ 45.00	\$ 75.00
B.....	1000	1½"	14	65"	36"	330	72.50	105.00
C.....	1500	1½"	14	91"	36"	400	100.00	150.00
D.....	2000	2½"	14	64"	60"	575	120.00	180.00
E.....	2500	2½"	14	75"	60"	690	145.00	210.00



1000 Pound Size.

## Milk and Cream Coolers

### "Victor" Disc

Built in a series of discs to give large cooling surface, economy of cooling medium and compactness. The six hundred pound size is just the right height to stand under the spout of an Alpha Separator and discharge the cream into a ten-gallon can of standard height.

The milk or cream is fed into the receiver at the top of cooler, and flows through the perforations around the base, spreading slowly over the upper surface of the disc, which, being flat, serves to retard the progress, so that it follows the surface of the discs, and when it reaches the collecting trough at the bottom, has approximately the same temperature as the cooling water entering the cooler.

This is a strictly counter current cooler, the cooling medium being supplied at the bottom, filling the discs and overflowing into a pipe extending through the center to the top. The water inlet is through the short nipple at the right and underneath the bottom, and the waste water is drawn off through the Tee in the supporting pipe. It will be seen that the cold water on the inside of the discs and the milk or cream flowing over the outside travel in opposite

directions, insuring the greatest economy of cooling medium and most effectual cooling.

This is an exceptionally well-made cooler, and will last a lifetime. The discs are made of heavy copper, tinned on the outside. The receiver on top and the collecting trough are made of heavy charcoal tin plate. Owing to its simplicity, it is easily cleaned in about one minute's time. Made in three regular sizes. Protecting cover furnished when wanted at small additional cost.

#### Sizes and Prices

Capacity	per hour	600 lbs.	Cooler	\$25.00	Cover	\$3.50
"	"	1,000 lbs.	"	35.00	"	5.00
"	"	2,000 lbs.	"	50.00	"	8.00

## Separator Cream Coolers

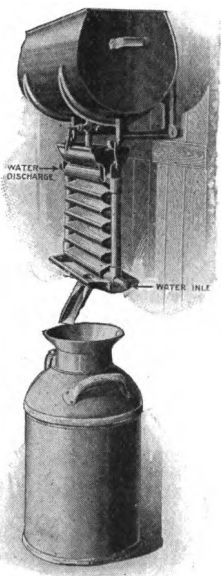
### The "Bair"

It consists of a hollow pan made of tin, the cream flowing over the upper surface, and the cold water under it, over the lower surface. As the space between is divided into sections by cross straps, the water flows back and forth until it reaches the exit at the upper end. The cream flows into the vat at the same temperature as the water. It gives excellent satisfaction.

#### Sizes and Prices

Length in Feet	Price Tin	Price Copper
6	\$ 8.00	\$18.00
8	9.00	25.00
10	10.00	30.00
12	12.00	35.00

## The Junior Milk Cooler and Aerator



The Junior Cooler is absolutely high-grade in every respect. The troughs and cooler are made of tinned copper and all joints smoothly soldered. The cooler is not guaranteed to stand excessive water pressure; in fact, no cooler of this type should be expected to stand high pressure. Ordinarily the cooler would be used with a supply of water from a tank elevated not more than a couple of feet above the top of the cooler, and if it is to be used with water from a main under pressure an anti-pressure standpipe should always be installed with the cooler.

### Directions for Ordering

Plain Cooler means the cooler only with perforated distributing trough and collecting trough. No brackets, milk tank or faucet are included.

Complete Cooler includes the cooler, upper and lower troughs, short spout, milk tank and faucet, brackets and screws.

The capacities given are based upon using twice as much water as milk and cooling from 100 to within two degrees of the water temperature.

Size	Wide	High	Capacity Gals. per hr.	Price Plain	Price Complete
A	15 ins.	10 ins.	20	\$10.00	\$15.00
B	15 ins.	14 ins.	40	14.00	20.00
C	15 ins.	17 ins.	60	19.00	25.00
D	15 ins.	23½ ins.	90	30.00	36.00

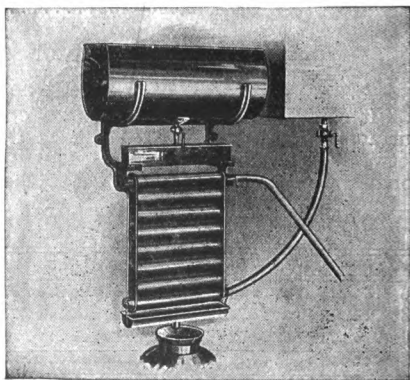
## The Official Cooler and Aerator

The cooling surface is corrugated in such a way as to practically form tubes, over which the milk trickles. Water enters the bottom tube, then passes into the next through the narrow opening and so on until it reaches the top, when it overflows through the outlets. The can, cooler and troughs are removable from the frame for cleaning. Cooler is made of copper, with heavy tin supply tank fitted with brass faucet. Strong and durable.

- No. 1. 14 inches wide, capacity 46 gals. per hour. Price.....\$16.00  
 No. 2. 18 inches wide, capacity 55 gals. per hour. Price.....\$18.50

Water connections are not furnished.

*Write for discount.*



## Dairy Conical Coolers

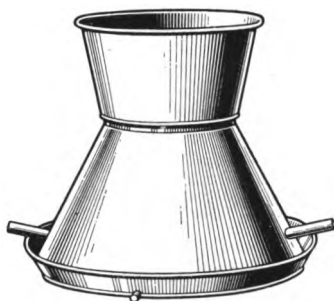
Milk cooled as fast as milked keeps better. The Dairy Conical is a very efficient cooler that sells at a price so low that it is easily within the reach of every dairyman. Dealers and creamerymen should insist on their suppliers using this cooler. It not only cools the milk, but completely aerates it, removing all feed and stable flavors.

We make it of tin or copper. Tin coolers are made of best quality tin with galvanized bottom. Copper coolers are made entirely of copper.

The Dairy Conical is a rapid cooler, reducing the temperature of the milk in one minute nearly to the temperature of the cooling medium. Can be used with any cooling medium, either running water, ice water, or, if a very low temperature is not required, ordinary well or spring water. The top is removable so that ice may be put directly into the cooling drum. A stirring device, not shown in cut, with which the ice water may be agitated frequently, is included.

It is automatic, requiring no attention while in use. Low down, simple in construction, and as easily cleaned as a common milk pail. Strong and durable, will last for years, costs but little, and pays for itself in time saved and better quality of product.

The following sizes of the Cooler are gauged, as nearly as possible, to take care of the milk as fast as drawn from various sized dairies with the average number of milkers. Be sure to get one large enough, as best cooling results are obtained with low pressure milk in the receiver.



No.	Capacity of Milk or Cream Receiver	Capacity of Water Receiver	Size of Dairy	Takes Care of Milkmen	Price Tin
2	4½ gal.	12 gal.	1 to 25 Cows	3	\$ 7.00
3	5½ gal.	20 gal.	25 to 50 Cows	5	8.00
4	11½ gal.	28 gal.	50 to 100 Cows	8	10.00

Extra sizes on special orders. Write for discount.

## "Baby" Up-to Date Cream Cooler

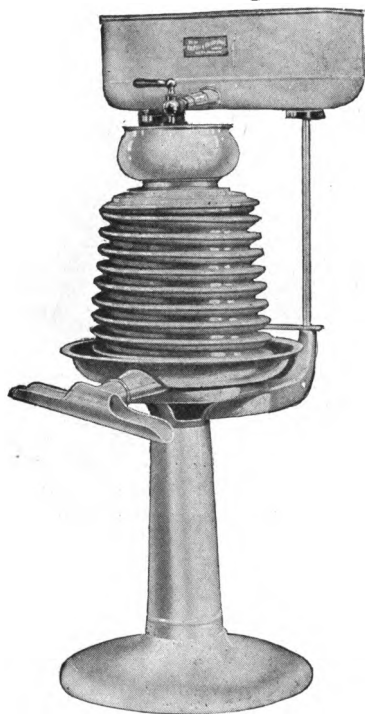
*For Cooling Cream from Hand Separators.*



The Baby Up-to-Date Cream Cooler is constructed on the same general lines as the Dairy Conical Milk Cooler, and is designed for use with a hand separator. The cooling surface is corrugated, increasing the distance the cream travels and increasing the cooling efficiency. Only 14 inches high. It sets on the shelf of the separator and cools the cream as fast as separated. Handled in this way cream keeps much better, and is of much better flavor, than if separated into a can which is then closed up and set in water to cool.

Price, each .....\$2.50

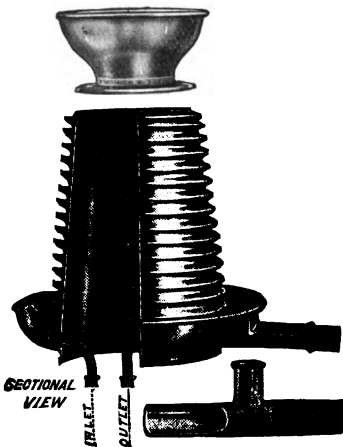
## Spiral-Conical Coolers



The construction and principle of this cooler is illustrated in the sectional cut. It has a spiral waterway, the water entering at the bottom and travels around the shell in a spiral course until it reaches the outlet at the top. The milk flowing downward over the outside is continually coming in contact with colder water and flows into the waiting can at practically the same temperature as the water supply. The surfaces over which the milk passes are rounding; there are no seams or dirt collectors of any kind. Cooling cone, collecting troughs and feed bowl are all made of copper, heavily coated with tin. Pedestal can be of any height, standard to milk outlet is 26 inches. Capacities are based on cooling milk from 95 degrees. The table of specifications gives the prices of this cooler with equipment. Plain cooler means the cooler body only, without supply tank or stand.

Dairy Sizes.

No.	Capacity, lbs. per hour	Plain Cooler Only Copper Tinned Throughout	Plain Cooler Only Polished Copper Bowls	Complete Tinned Copper Cooler with Stand & Tin Sup. Tank Mtd. on Cooler.	Complete Cooler Polished Copper Bowls and Copper Sup. Tank Mtd. on Cooler
5	500	\$30.00	\$34.50	\$43.50	\$ 51.00
8	800	40.00	46.00	56.00	65.50
10	1000	50.00	57.50	69.00	80.50
15	1500	75.00	86.25	98.00	113.75



Prices of Associated Parts.

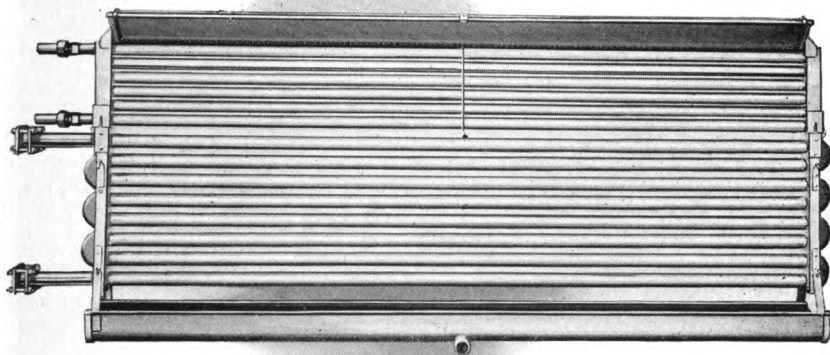
Supply Tanks With Faucets.				Associated Equipment				
No.	Gals.	Tin	Polished Copper	Iron Stand Only	Stand and Tank Sup.	Copper Mantle	Tin Mantle	Wall Brackets
5	6	\$5.00	\$ 8.00	\$5.00	\$ 8 50	\$12.00	\$ 6.00	\$1.00
8	8	6.00	9.50	5.50	10.00	15.00	8.00	1.25
10	10	7.00	11.00	6.00	12.00	18.00	11.00	1.50
15	12	8.00	12.50	8.00	15 00	22.00	15.00	1.75

**Double Water Connection** for ice water and well water, extra \$5.00.

**Creamery Sizes**, capacities from 1,000 to 6,000 lbs. per hour. Prices on application.

# Direct Expansion Coolers

Connected to  
Sanitary Tubular Coolers



The above cut is from a photograph of a tubular milk cooler using water in the upper section of six pipes, while the lower section of eight pipes is made of special ammonia piping for direct expansion of ammonia from refrigerating machine. Employing direct expansion instead of brine for the final cooling does away with the necessity for brine pump, brine tank and coils (or brine cooler), and saves the attendant losses.

It is to be taken into consideration that the entire load of cooling is thrown directly onto the machine during the period the cooling is being done, and that it is not possible to store up refrigeration at other times to be used in cooling, as is the case with brine. However, where the necessary refrigerating machine capacity is available for the cooling work, these direct expansion coolers give excellent satisfaction.

We rate our cooler sections on the basis of cooling from 80 to 40 degrees Fahrenheit. The sections are made with 2-inch diameter steel tubes. The number of pipes in the section varies with the capacity.

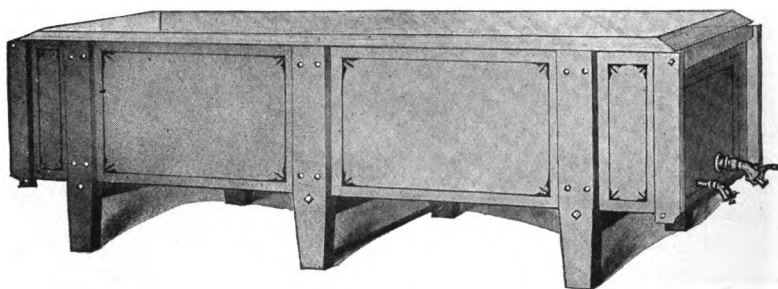
In the following table is given the capacities of direct expansion cooler sections and the refrigerating machine capacity required to cool from 80 to 40 deg. Fahr. for each size.

## Specifications

Capacity lbs. per hour.	Refrigerating Capacity Required.	No. of 2-in. Tubes.	Length in Feet
750	2½ tons	6	4
1200	4 tons	6	6
1800	6 tons	8	6
2400	8 tons	8	8
3000	10 tons	10	8
4500	15 tons	10	12
6000	20 tons	12	14
7500	25 tons	14	14
9000	30 tons	16	14
15000	50 tons (2 sec.)	14	14

Specifications are for direct expansion cooler sections only with flange ammonia couplings, and do not include distributing and collecting troughs. Prices on application.

## Vats—Receiving and Cream



The splendid reputation of the Curtis Vats is due to the excellent material, correct design and fine finish. They are made up in plain receiving, single and twin cream styles. All vats are equipped with noiseless steam heating pipes. Regular vats have flat rail and patent channel bottom. Jackets are made of cypress, natural finish and pine painted. Vats carried in stock all have tin linings and painted pine jackets.

Prices of Receiving Vats

Gal.	Overall Dimensions			Ship. Weight	Tin Lined	20 Gauge Steel	Copper Bottom	Copper Lined
	Length	Width	Height					
100	5' 8"	3' 3"	2' 11"	280	\$ 38.00	\$ 55.00	\$ 56.00	\$ 69.00
150	6' 2"	3' 11"	2' 11"	350	40.00	60.00	60.00	71.00
200	7' 5"	4' 1"	2' 11"	375	45.00	65.00	63.00	76.00
300	9' 6"	4' 4"	2' 11"	500	55.00	75.00	69.00	86.00
400	10' 8"	4' 4"	3' 0"	720	65.00	82.50	79.00	108.00
500	12' 5"	4' 6"	3' 0"	800	70.00	87.50	90.00	121.00
600	14' 1"	4' 7"	3' 0"	860	80.00	95.00	100.00	134.00
700	15' 4"	4' 6"	3' 0"	920	90.00	105.00	110.00	145.00
800	15' 4"	4' 10"	3' 0"	1050	100.00	115.00	120.00	158.00
900	15' 4"	5' 4"	3' 0"	1100	110.00	130.00	135.00	170.00
1000	15' 4"	5' 11"	3' 0"	1150	120.00	145.00	145.00	182.00

Twin Cream Vats, Ice Box End.

Gal.	Overall Dimensions			Ship. Weight	Price		
	Length	Width	Height		Tin Lined	Copper Bottom	Copper Lined
200	8' 5"	4' 10"	2' 9"	725	\$ 66.00	\$ 85.00	\$100.00
300	10' 6"	4' 10"	3' 1"	785	77.00	90.00	110.00
400	11' 8"	5' 1"	3' 1"	1100	88.00	106.00	126.50
500	13' 5"	5' 2"	3' 1"	1200	100.00	122.00	137.50
600	16' 0"	5' 4"	3' 1"	1300	110.00	132.50	154.00
700	16' 4"	5' 6"	3' 1"	1400	120.00	148.50	170.00

Twin vats with ice box on the sides instead of end, same price as above. Side ice box vats are 12 inches shorter and 17 inches wider than above. With ice boxes on sides and end, \$5.00 extra.

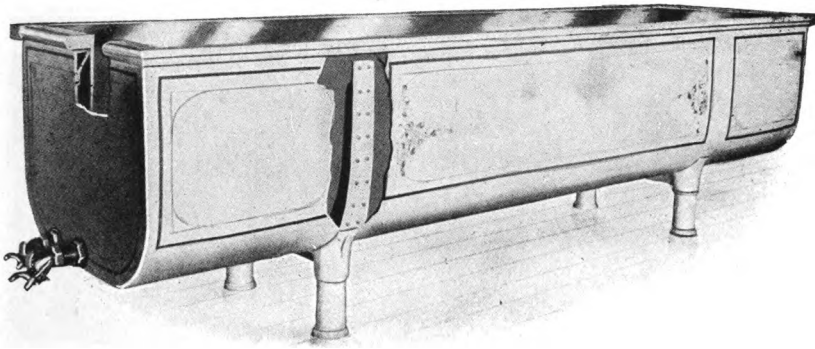
Single Cream Vats, Ice Box End

Gal.	Overall Dimensions			Ship. Weight	Price		
	Length	Width	Height		Tin Lined	Copper Bottom	Copper Lined
100	6' 8"	3' 3"	2' 11"	280	\$40.00	\$ 61.00	\$ 74.00
200	8' 5"	4' 1"	2' 11"	375	50.00	69.00	80.00
300	10' 6"	4' 4"	2' 11"	500	60.00	74.00	91.00
400	11' 7"	4' 4"	3' 0"	720	70.00	85.00	113.00
500	13' 5"	4' 6"	3' 0"	800	75.00	95.50	126.00
600	15' 1"	4' 7"	3' 0"	860	85.00	106.00	137.50

With ice box on sides instead of end, same price as above. Side ice box vats are 12 inches shorter and 12 inches wider than above. With ice boxes on sides and end, \$5.00 extra.



## The Sanitary Ideal Vat



This vat is of the finest construction throughout. There is no wood whatever used in this vat except the top rail to which the inner lining is attached. The frame is of heavy galvanized steel and made in the same shape as the inner lining. This frame will outlast several wood frame vats. The lining and jacket are so put together that the regular water space is left between them as shown in the cut. If used for a cream vat an ice box is provided at the end.

The whole vat is held up and strengthened by strong iron legs attached to the inner knees or braces to which the outside jacket or frame is attached in such a way as to absolutely prevent bulging or sagging.

We believe that there is a tendency among dairymen to equip their plants with the most substantial goods it is possible to obtain. To such we commend this vat as embodying all the requirements of strength, durability, handsome appearance and cleanliness. We fully guarantee them in every respect.

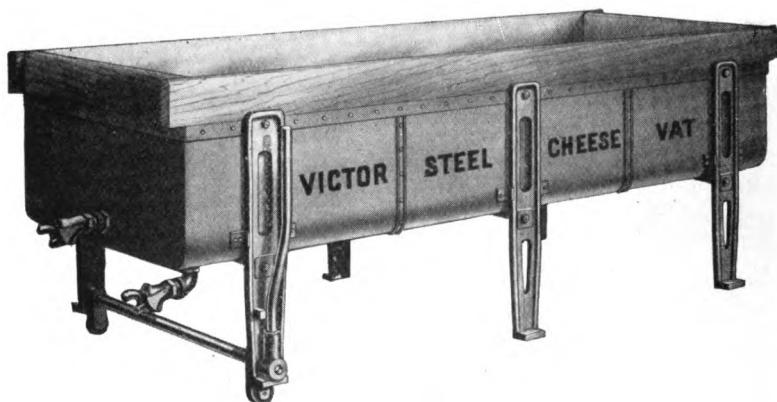
### Sizes and Prices

Gal.	Overall Dimensions			Shipping Weight	Tin Lined	Copper Lined	Extra Linings	
	Length	Width	Height				Tin	Copper
100	4' 9"	2' 8"	3' 3"	570	\$ 55.00	\$ 90.00	\$27.50	\$45.00
200	7' 2"	3' 6"	3' 3"	600	65.00	100.00	32.50	50.00
300	8' 8"	3' 6"	3' 3"	700	80.00	116.00	40.00	65.00
400	11' 1"	3' 6"	3' 3"	850	100.00	148.00	50.00	74.00
500	11' 8"	4' 0"	3' 3"	1150	115.00	170.00	57.50	85.00
600	13' 10"	4' 0"	3' 3"	1300	130.00	190.00	65.00	95.00
700	13' 10"	4' 0"	3' 7"	1500	140.00	203.00	70.00	100.00
800	13' 10"	4' 6"	3' 7"	1650	150.00	220.00	75.00	110.00
900	13' 10"	4' 11"	3' 7"	1800	165.00	236.50	82.50	115.00
1000	15' 4"	4' 11"	3' 7"	2000	190.00	270.00	95.00	135.00

Ice Box on end, \$5.00 extra.

# Victor Steel Vats

Patented



The above illustration shows the new Victor Steel Vat. This style of vat has many advantages over the wood jacketed vat.

As its name implies it is a steel vat, there being no wood used in its construction except the wood rail at top to which the tin lining is attached.

The inner vat or lining is built the same as our other vats, the best grade of Cookley K tin plate being used. Lining can be lifted out same as wood vats to allow painting inner surface of steel jacket.

The jacket or outer vat is made entirely of heavy galvanized steel plate. A heavy steel angle rail extending around the top furnishes a rigid support for the steel sheets, which are bent at the corners to conform to the shape of the vat. There are no seams lengthwise, a single sheet extending from rail to rail. The sheets forming the ends are double seamed and riveted to the bottom and sides; all seams are double and riveted to channel iron strips.

The legs are cast iron painted with aluminum. They are bolted to the angle rail at top of vat but are not fastened directly to the vat otherwise. Cross rods prevent the legs from spreading and on top of each rod is a channel iron cross beam supporting the vat bottom.

The vat is of the best construction. It can be used for any purpose for which a vat with water space is ordinarily wanted.

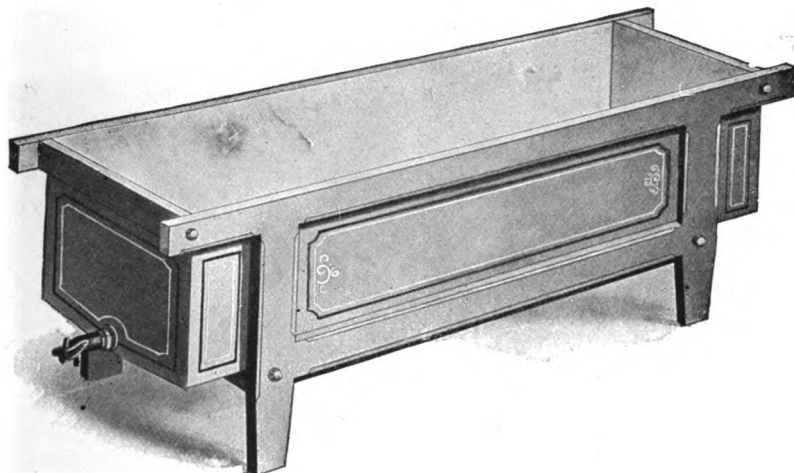
Legs on regular vats are all same length, the tilting attachment shown in above cut not being furnished except at additional charge.

## Sizes and Prices

MILK RECEIVING					CH. VATS WITH TILTER		
Gal.	Shipping Weight	Tin Lined	Copper Bottom	All Copper	Tin Lined	Copper Bottom	All Copper
100	425	\$40.00	\$60.00	\$73.50	\$45.00	\$68.00	\$81.00
150	470	45.00	70.00	80.00	50.00	75.00	85.00
200	510	57.50	80.00	92.50	60.00	82.50	95.00
250	580	64.00	85.00	100.00	67.50	88.00	103.00
300	665	70.00	90.00	106.00	72.50	92.00	108.50
400	800	77.50	97.00	125.00	80.00	100.00	128.00
500	1020	85.00	110.00	141.00	90.00	115.00	146.00
600	1130	95.00	122.00	157.00	100.00	126.00	162.00
700	1200	100.00	127.00	165.00	105.00	131.00	168.00
800	1275	105.00	135.00	170.00	110.00	136.50	175.00

For cream vats with ice box add \$5.00 to list on receiving vats.

## Skeleton Milk Vat



When a double vat with water compartment is not required these skeleton vats will serve every purpose. Construction is in every way equal to our regular vats. The frame work is strongly made of good weight of stock and nicely finished. The tin vat is XXXXXX throughout fitted with perfection gate. The outside of tin is painted to match the wood work, making it very attractive looking. There is no other skeleton vat on the market that can compare in appearance and durability with this one.

### Sizes and Prices

100 gallons, shipg. wght., 175 lbs.	\$32.00	500 gallons, shipg. wght., 600 lbs.	\$60.00
200 gallons, shipg. wght., 225 lbs.	42.00	600 gallons, shipg. wght., 700 lbs.	65.00
300 gallons, shipg. wght., 375 lbs.	49.00	700 gallons, shipg. wght., 800 lbs.	75.00
400 gallons, shipg. wght., 475 lbs.	56.00	800 gallons, shipg. wght., 900 lbs.	85.00

Special size vats of this style, either tin or galvanized steel, quoted on request. Dimensions approximately the same as for receiving vats.

## Cream Vat Covers

It is much easier to control the temperature of the cream in vat, especially in hot weather, when a good tight cover is used. The cream vat usually stands in a warm room, and while the ice water under the vat cools a part of the cream, the free circulation of the hot air over the top prevents it from ripening evenly.

The cream in an open vat is also exposed to any dust or odors that may be admitted to the cream room. The vat cover in a large measure overcomes these difficulties.

Our vat covers are nicely made and finished to correspond to our regular style of vats.

### Prices for Single Vats

Size	All Wood	Tin Lined	Size	All Wood	Tin Lined
100 gallons.....	\$3 00	\$ 5 00	600 gallons .....	\$ 8 25	\$17 00
200 gallons.....	3 75	7 25	700 gallons .....	9 25	18 50
300 gallons.....	5 00	10 00	800 gallons .....	10 25	20 50
400 gallons.....	6 00	13 00	900 gallons .....	11 50	21 50
500 gallons.....	7 00	14 25	1000 gallons .....	11 75	23 00

### Prices for Twin Vats

Size	All Wood	Tin Lined	Size	All Wood	Tin Lined
100 gallons .....	\$4 00	\$ 7 00	500 gallons .....	\$ 9 25	\$17 25
200 gallons .....	5 00	9 75	600 gallons .....	10 50	20 25
300 gallons .....	6 00	12 75	700 gallons .....	13 00	23 00
400 gallons .....	8 00	14 25			

In ordering Cream Vat Covers for old vats be careful to give the exact dimensions.

## Dairy Cream and Cheese Vats

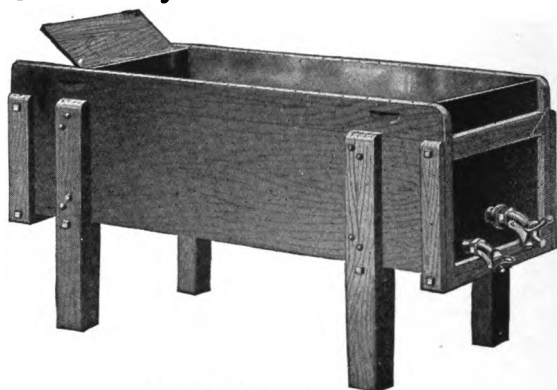
### The Curtis Wood Jacketed Vat.

We furnish this vat in two styles, for tempering and ripening cream, and for making cheese. The cream vat has an ice box at one end as shown in cut; the cheese vat is made without ice box, but is fitted with steam pipes and noiseless heater. The water space around the vat enables you to heat or cool quickly.

The wood jacket is made from selected stock and nicely painted and decorated outside; inside it is also painted to preserve the wood. Lining of pan is XXXX tin. It has our patented channel bottom, formed by special machinery, and will drain dry without tilting. Tin is painted on the outside next to water space to prevent rust. Price of vats includes perfection gates as shown. Shipped from Southern Wisconsin factory.

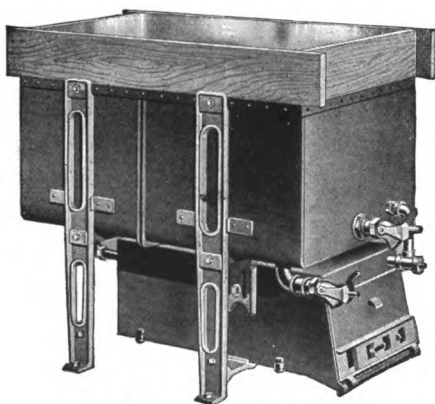
25-gallon cheese vat, weight 120 lbs.	Price.....	\$25.00
50-gallon cheese vat, weight 170 lbs.	Price.....	27.50
75-gallon cheese vat, weight 240 lbs.	Price.....	35.00
25-gallon cream vat, weight 140 lbs.	Price.....	27.00
50-gallon cream vat, weight 200 lbs.	Price.....	30.50
75-gallon cream vat, weight 290 lbs.	Price.....	39.00

We furnish larger sizes if wanted. Write for prices.



Wood Jacketed Cream Vat

### The Victor Steel Vat



Self-Heating Steel Cheese Vat

The only wood used in the Victor Vat is the wood rail around the top. The outside jacket is galvanized steel; the pan is XXXX tin, with a water space between. The stove is entirely separate from the vat except for the pipe connections through which water circulates. Most self-heating vats have the heater built in and there is great danger of ruining the vat should a fire be started without having the jacket full of water. This danger we entirely avoid with this type of vat. The Victor is also furnished without the stove for steam heating. For making cheese in the dairy there is nothing better than the Victor Vat. Equipped with an ice box on one end, it makes a satisfactory and durable cream ripening vat. Shipments made from our Southern Wisconsin factory.

50-gallon Self-Heating Vat, shipping weight 300 lbs.	\$42.50
75-gallon Self-Heating Vat, shipping weight 325 lbs.	47.50
100-gallon Self-Heating Vat, shipping weight 350 lbs.	50.00
50-gallon Vat for steam, shipping weight 250 lbs.	32.50
75-gallon Vat for steam, shipping weight 275 lbs.	37.50
100-gallon Vat for steam, shipping weight 310 lbs.	40.00
50-gallon Vat with ice box, shipping weight 270 lbs.	37.50
75-gallon Vat with ice box, shipping weight 300 lbs.	42.50
100-gallon Vat with ice box, shipping weight 330 lbs.	45.00

## Vat Linings

Give length of tin on line A.

Give width of tin on line B.

Give height of sides on the four corners D. E. F. G.

Give height in center where outlet is C.

Give the whole outside length of side rail H.

Give the thickness and width of side rail I. J.

Is vat built with high or flat rail, (cut shows high rail).

Does rail stand on end or lie flat.

Is your vat ice box end or ice box side.

Is it channel, V shape or flat bottom.

Is it cheese or cream vat.

All inside measurements.

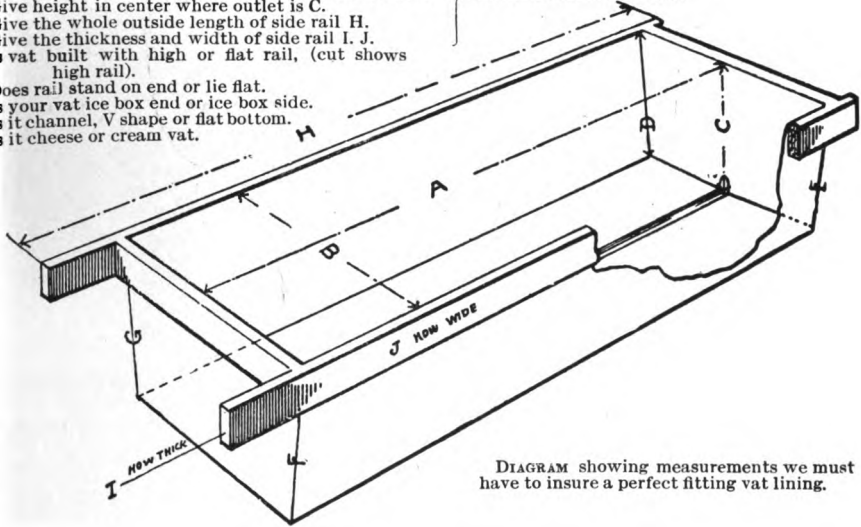


DIAGRAM showing measurements we must have to insure a perfect fitting vat lining.

### Linings with Top Rails for Cheese, Cream or Receiving Vats

Gal.	Tin	Copper Bottom	All Copper	20 Gal. Steel
100.....	\$18.00	\$39.50	\$42.50	.....
150.....	20.00	42.00	53.00	.....
200.....	22.00	43.00	55.00	.....
300.....	27.00	44.00	61.00	.....
400.....	32.00	49.50	78.00	.....
500.....	35.00	58.00	89.00	50.00
600.....	37.00	60.50	97.00	60.00
700.....	42.00	66.00	103.00	70.00
800.....	47.00	71.50	109.00	80.00
900.....	52.00	77.50	115.00	90.00
1000.....	57.00	83.00	121.00	100.00

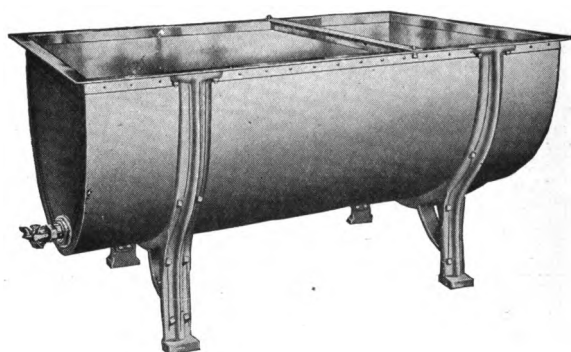
If linings are ordered without rails, list price is \$2.00 less, but a charge of 50 cents to 75 cents will be made for the crating rail. We always recommend ordering with rails.

### Linings with Top Rail for Twin Cream Vats

Gal.	Tin Lined	Copper Bottom	All Copper
200.....	\$33.00	\$57.00	\$ 69.00
300.....	38.00	60.00	77.00
400.....	43.00	63.00	88.50
500.....	48.00	77.00	94.50
600.....	53.00	84.50	106.00
700.....	58.00	95.50	117.00

If linings are ordered without rails, list price is \$3.00 less, but a charge of \$1.00 to \$1.50 will be made for crating rail. We always recommend ordering with rails.

## 20th Century Sanitary Vat



This vat is made of heavy material and makes a very convenient receiving vat for use in creameries and sanitary milk plants.

Where no water space is required for heating or cooling, this vat is much more satisfactory than an ordinary vat. It is more sanitary, as there is no wood to rot or become foul.

A heavy angle iron top rail prevents the vat from bulging when full of milk. The entire weight of vat and contents being carried from the top, there is no danger of buckling.

We can also furnish this vat without legs for use where it is desired to suspend vat from ceiling.

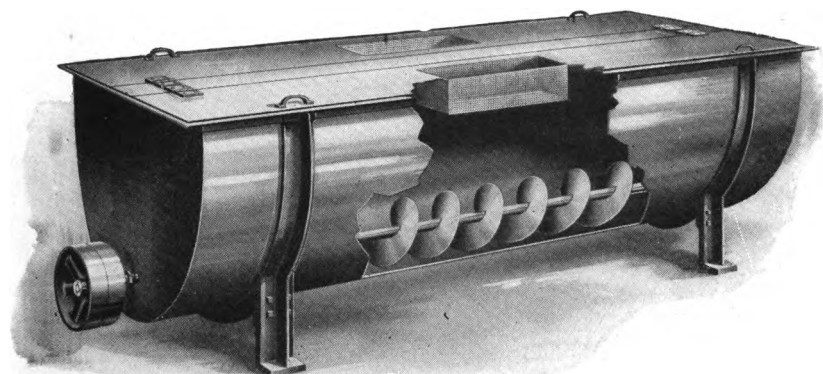
The vat is equipped when wanted, with an agitator (not shown in cut). The agitator is of the helicoid pattern and extends lengthwise of the vat in a position to agitate the contents of the vat thoroughly regardless of the quantity. The vat with agitator is self-contained, requiring no counter-shaft. Tight and loose pulleys are included.

The helicoid type of agitator requires less power than any other type and is more efficient. The contents of the vat are given an end to end motion as well as a side motion and there is no splashing. For illustration of agitator, see the Paragon Vat on next page.

### Sizes and Prices

Gallons	OVERALL DIMENSIONS (Not including gate.)			Approx. Ship. wt.	PRICE, TINNED STEEL		PRICE, TINNED COPPER		Agitator Extra
	Length	Width	Height		With Legs	Without Legs	With Legs	Without Legs	
75	3' 9"	3' 1"	2' 8"	225	\$48.00	\$38.00	\$75.00	\$ 65.00	\$20.00
100	4' 10"	3' 1"	2' 8"	245	50.00	40.00	80.00	70.00	22.00
150	5' 11"	3' 1"	2' 8"	300	53.00	43.00	85.00	75.00	24.00
200	5' 5"	3' 9"	2' 8"	400	55.00	45.00	90.00	80.00	25.00
250	6' 1"	3' 9"	2' 8"	450	60.00	49.00	95.00	84.00	26.00
300	7' 6"	3' 9"	2' 8"	500	65.00	53.00	100.00	88.00	30.00
400	10' 1"	3' 9"	2' 8"	600	75.00	60.00	110.00	95.00	40.00
500	12' 8"	3' 9"	2' 8"	700	80.00	65.00	120.00	105.00	45.00
600	14' 8"	3' 9"	2' 8"	800	90.00	75.00	130.00	115.00	50.00

## Paragon Sanitary Vat



This round bottom vat is made to fulfill the most exacting requirements. It is of heavy construction throughout and made in capacities of from 100 gallons to 1,000 gallons inclusive. The 100, 200 and 300 gallon sizes are made of 20-ounce copper, tinned on both sides; in all larger sizes 40-ounce copper is used. All seams are double riveted and joints, corners, etc., are soldered flush.

The standards or legs are of extra heavy cast iron, galvanized. The top frame is of angle steel galvanized.

Each vat is furnished with covers hinged to center rail and having a strainer 12 x 24 inches in size and 6 inches deep of brass strainer cloth set in one side.

The Agitator is of helicoid pattern, 12 inches in diameter, on a tinned shaft; being located at the bottom of the vat it keeps the milk thoroughly mixed whether full or only partly filled. The Agitator runs in bronze bearings and is fitted with tight and loose pulleys 12 in. diameter by 3 in. face.

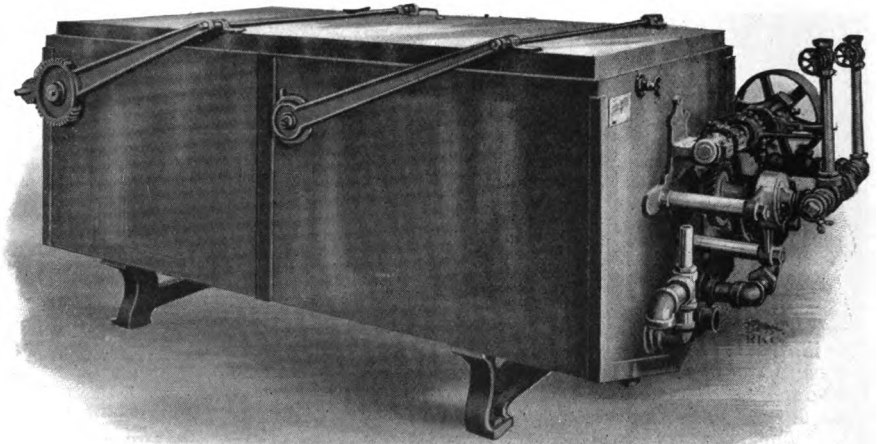
Size	Height Over All	Width Over All	Length Over All	Approximate Ship. Wt.	Price
100 gal.	34 in.	46 in.	45 in.	500	\$150.00
200 "	34 "	46 "	75 "	600	185.00
300 "	34 "	46 "	100 "	800	225.00
400 "	34 "	46 "	126 "	1000	320.00
500 "	40 "	57 "	110 "	1400	375.00
600 "	40 "	57 "	129 "	1500	400.00
700 "	40 "	57 "	148 "	1800	430.00
800 "	40 "	57 "	167 "	2000	480.00
900 "	40 "	57 "	186 "	2150	535.00
1000 "	40 "	57 "	206 "	2300	590.00

## Absorbent Cotton Filters

We are prepared to furnish absorbent cotton filters to fit on top of Paragon vats. The filter consists of a pan fitting over the entire vat, divided into two compartments so that one side may be cleaned while the other is in use. See page 83 for illustration and complete description.

# Wizard Buttermilk Ripener

## Type D



The buttermilk ripener is, in general construction, similar to our cream ripeners, but modified to conform to the requirements of buttermilk manufacture. The jacket is lined inside and out with tinned copper. Vat pan is also tinned copper. Underneath vat pan and extending the entire length of vat there is a water compartment in which is placed an extra large coil of pipes for circulating brine through the cooling water. A circulating pump is furnished with all necessary connections. A pasteurizing attachment is also included. The coil is of special construction.

### Over All Dimensions

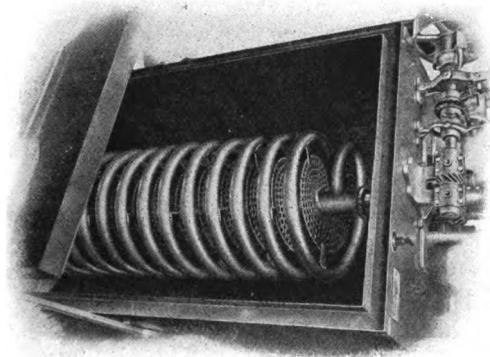
Size, Gals.	Long.	Wide.	High.	Shipping Weight.
100	95 in.	43 in.	34 in.	2,000 lbs.
200	111 in.	48½ in.	39 in.	2,500 lbs.
300	126 in.	52½ in.	39½ in.	2,980 lbs.
400	132 in.	57½ in.	42 in.	3,300 lbs.
500	144 in.	60 in.	44 in.	3,600 lbs.

Prices on application.



## Scientifically Soured Milk

Lactic Buttermilk, Culture Buttermilk, Bulgarian Sour Milk, Etc.



The virtues of buttermilk and sour milk as a beverage, food and tonic have long been recognized, but it is only recently that the scientists have found out why it has so much greater value than can be accounted for on the basis of the nutriment it contains. As a result of the work of investigators on this subject, and the publication of their researches, the demand for sour milk beverages has increased tremendously, a fact that is being taken advantage of by wide-awake dairymen.

Scientifically soured milk is known by various names, such as culture buttermilk, Bulgarian sour milk, and various

special names. There is, of course, some difference in the several products, depending on the particular species of bacteria employed, the quality of the milk for the product and the care and attention given to its preparation, but the process is in general the same for all and the requirements for a perfect product are well established. In general, the process is much like making starter for butter making, and consists in pasteurizing the milk, adding mother culture, ripening, and finally emulsifying thoroughly to produce the smooth, creamy body required.

The vat illustrated on the page opposite has been specially designed for buttermilk manufacture. The coil, which is of special construction, is shown in the view herewith. The heating and cooling medium is carried through a helical pipe coil made of extra heavy copper tubing, tinned both sides and having brazed joints. In the center of the coil is a spiral screen, which thoroughly emulsifies the buttermilk and produces the desirable creamy product.

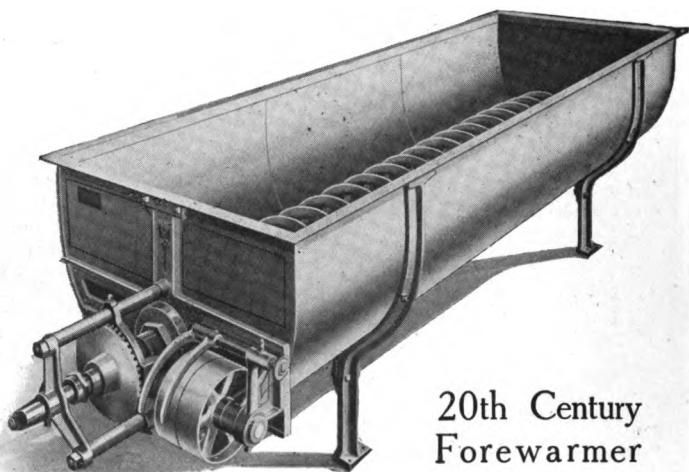
**Special Information**—We are in position to furnish interested parties with complete information as to the preparation of lactic buttermilk, culture buttermilk, scientifically soured milk, etc., and all necessary apparatus and supplies for the manufacture on a commercial scale, including mother culture. If interested please write.

### Butter Milk Dispenser

Culture buttermilk is largely sold through the soda fountains and confectionery stores. The urn illustrated herewith is for the soda fountain or counter. It serves the purpose of a container for the buttermilk and is at the same time an effective advertisement. The name or trade-mark is colored in the enamel and is therefore permanent. It is strictly sanitary. It has a large ice space. Outside shell and cover are thoroughly insulated. Holds about 10 quarts of buttermilk. Regular size as illustrated. It has a diameter of 14 inches and a total height of 20 inches. Special sizes will be made to order. Prices on application.



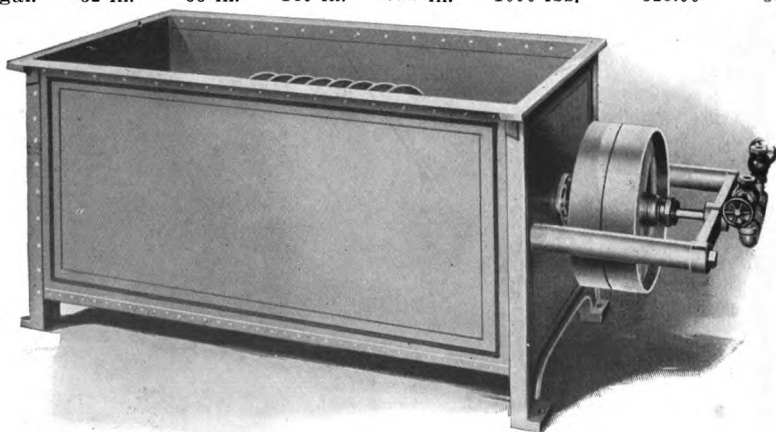
## Forewarmers and Mixing Vats



20th Century  
Forewarmer

For warming and equalizing milk or cream as it is received at the creamery. Coll is of seamless copper tubing tinned. Prices include strainer. Outlet  $1\frac{1}{4}$  in. diameter and 2 inches from floor. Made with either tin or copper pan.

Cap.	Height	Width	Length Vat	Length Over all	Shipping Weight	Price Copper	Price Tin
100 gal.	26 in.	28 in.	54 in.	74 in.	300 lbs.	\$125.00	\$115.00
200 gal.	28 in.	40 in.	74 in.	94 in.	450 lbs.	160.00	135.00
300 gal.	28 in.	40 in.	111 in.	131 in.	550 lbs.	185.00	160.00
400 gal.	28 in.	40 in.	148 in.	168 in.	700 lbs.	215.00	195.00
500 gal.	28 in.	45 in.	140 in.	168 in.	800 lbs.	275.00	250.00
600 gal.	32 in.	55 in.	140 in.	168 in.	1000 lbs.	325.00	300.00



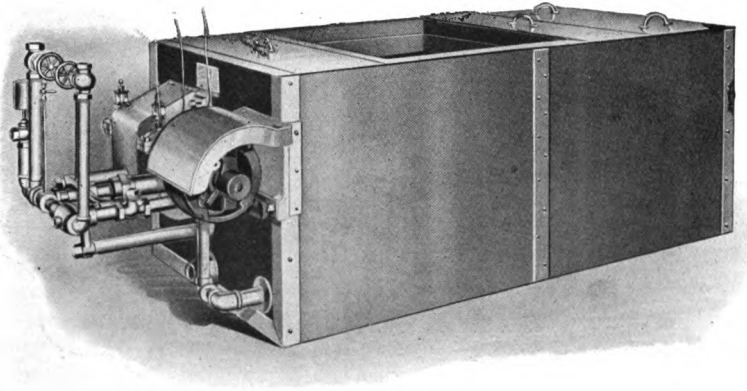
### Box Type Forewarmer

This style of forewarmer has been in use for several years and has given the best of satisfaction. The coll is of the disc type, and has steam and water connections. The entire machine is very substantially constructed. A perforated copper strainer to fit top of vat is included with each machine.

Size.	No. Discs.	Dimensions Over All	Ship. Weight	Price.
100 gal.	5	66x30x30 in.	600 lbs.	\$250.00
150 gal.	8	84x30x30 in.	800 lbs.	300.00
200 gal.	15	102x30x30 in.	1000 lbs.	350.00

# Wizard Dump Vat and Forewarmer

Type F



This is a high-grade appliance designed to be used as a dump vat in connection with Wizard Pasteurizing and Holding Outfits, or any other style of pasteurizing apparatus. It is made with a strong and rigid wood frame lined with tinned copper. Outside is also copper-covered. The top of the vat has a large strainer across entire top, as shown. Each vat is equipped with a regular Wizard spiral coil, self-circulating type, with steam and water connections, making it especially desirable as a forewarmer during the winter months when milk arrives very cold and sometimes frozen.

The above cut shows the machine fitted for individual electric motor drive, but standard machines are built for belt drive.

Made in two sizes.

100-gallon size, price.....	\$ .
200-gallon size, price.....	.

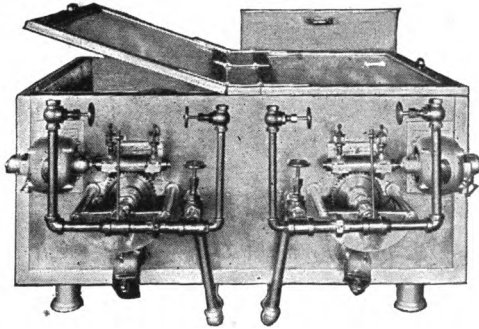
Specifications and prices will be given on application.

## Brine Coils for Wizard Agitator Ice Box Ends

Where a refrigerating machine is used it is sometimes desirable to have a coil for brine circulation in the ice box, especially when vats are used for storage purposes. We are prepared to furnish such coils with any style Wizard Agitator or Mixer having an end ice box. Coils are complete and have lock nuts on inlet and outlet ends for the wall of the ice box, and are ready for connection to brine lines. We put in all the pipe that the box will hold. Write for specifications and prices.

## Special Vats and Appliances

While our standard lines of equipment answer practically every commercial dairy requirement, there occasionally arises a demand for some "special" to fill an out of the ordinary use. We illustrate here two appliances made on order for a customer, which illustrates our facilities for this class of work.

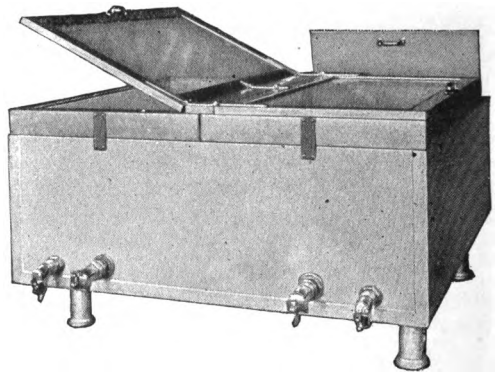


### Special Twin Wizard Agitator

This machine has an extra fine finish and is used for demonstrating purposes. It is lined inside and out with tinned copper and fitted with plate glass covers for each compartment. Each section is independent of the other and electric motors for direct drive are attached to the frame.

### Special Twin Vat

This was also made for demonstrating purposes. One side is used for cheese and the other for cream. Copper lined inside and out; glass covers; has water space around pans and ice boxes on end. Sections are independent of each other.

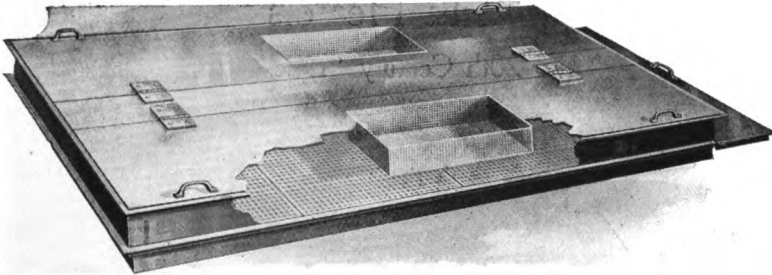


## Special Sheet Metal Construction

The use of standard goods is always to be recommended on the score of economy. There are, however, many situations where vats of special dimensions and construction are desirable, and we are prepared to produce special vats of any size or description in tin, copper or steel. Our facilities in this line of manufacture are large and complete, and we are enabled to meet the wants of customers to their entire satisfaction. Upon receipt of specifications or particulars we will be pleased to furnish estimates on any special work wanted.

# Absorbent Cotton Filters

To Fit Paragon Vats



These filters are made in twin type, having a partition in the center, so that they may be used alternately. As one side becomes clogged the milk may be shifted to the other and the first cleaned and made ready for use again. The filters consist of tinned copper screens for holding absorbent cotton, and which fit inside the frames. In making the filter ready for use the bottom screens are put in the frame. Next a layer of gauze, and then a layer of absorbent cotton, followed by another layer of gauze, and lastly, the top screens, making a perfect filtering material for milk. The filter covers are fitted with 12 x 24 coarse strainers for the inflowing milk. The cotton should be destroyed after using, but the gauze may be washed and sterilized and used again.

**Material and Construction**—Screens are made of extra heavy copper, tinned on both sides, with square openings or perforations; sides and cover are also copper, tinned both sides. Frames are angle steel, all seams with rivets neatly flushed with solder.

The standard sizes are made to fit Paragon Vats of corresponding capacities. Special filters of any size and shape will be made to order. In ordering, give exact size of vat. Price of special filters is \$10.00 per square foot.

Vat	Width	Length	Square	
Gals.	Vat Inside	Vat Inside	Feet	Price
100	42 in.	31 in.	5½	\$ 49.50
200	42 in.	61 in.	14	126.00
300	42 in.	86 in.	21	189.00
400	42 in.	111½ in.	27	243.00
500	51 in.	95 in.	29	290.00
600	51 in.	114 in.	36	360.00
700	51 in.	133½ in.	43	430.00
800	51 in.	152¼ in.	50	500.00
900	51 in.	171½ in.	57	570.00
1000	51 in.	191 in.	63	630.00

Filter is 12 inches shorter than inside length of vat to allow for hinged cover at end.

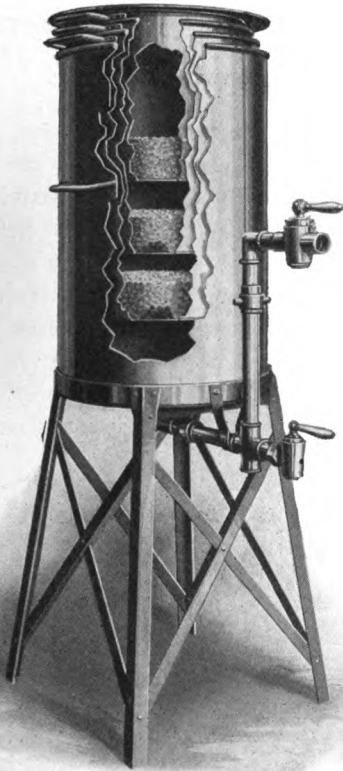
## Victor Quartz Filter

The filter consists of three pans with perforated metal bottoms, which contain three grades of quartz. The milk first passes through coarse quartz, then through a medium grade, and last through a very fine-grained quartz. The quartz is cleaned daily after use.

The apparatus is constructed in the very best manner, special care being given to sanitary features. The pans and strainers are made of heavy copper, tinned on both sides. Connections are for sanitary piping, and those shown in cut are furnished. The stand is made of galvanized angle iron and strongly braced. Where required, a float and float valve for regulating the feed are furnished, but are not included with filter unless expressly specified in the order.

Sizes and prices are as follows:

Cap. per hour	Price
2,000 lbs.	\$100.00
4,000 lbs.	125.00
6,000 lbs.	150.00
8,000 lbs.	200.00



# Milk Heaters

## 20th Century "Disc"



Disc Heaters are made in three styles, belt drive, turbine drive and belt drive with pump attachment. The regular belt drive machine is intended for use where the milk can pass from the receiving vat through the heater to separator without elevating, or a sanitary pump may be used. The heater with pump attachment does away with necessity for a separate pump. It may be set directly over the vat high enough to deliver the milk to the separator. The pump used is a simple plunger pump actuated by a cam on the disc shaft. It is easily cleaned. Turbine drive machines are intended for use in skimming stations where no engine is used. All belt drive heaters have pulley 12 in. x 2 in. Speed 50 R. P. M. Milk inlet is 15½ inches and outlet 3½ inches above base of heater.

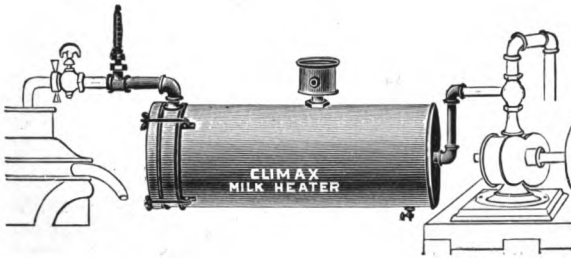
### Sizes and Prices

Number of Heater.....	1	2	3	4
Capacity, Separators will Heat for.....	1	2	4	5
Outside Dimensions. Width, 26" Length.....	40"	46"	53"	58"
Price, Belt Drive, Copper Discs.....	\$72.50	\$93.50	\$125.00	\$170.00
Add for Pump Attachment.....	25.00	25.00	30.00	30.00
Add for Turbine Drive.....	25.00	25.00	25.00	25.00
Shipping Weight, Belt Drive Lbs.....	290	310	350	380

Heaters with pump furnished belt drive only.

# Milk Heaters

## The Climax



In construction, the inside cylinder is a removable one, being held in place by bolts and thumb nuts, and set away from the outside cylinder to form a space for a thin sheet of milk between the outside and inside cylinder. The milk is delivered into this place and spreads out into a thin sheet or layer, so as to be evenly and thoroughly heated.

The inside cylinder may be easily and quickly removed, permitting the ready and thorough cleansing of all surfaces with which the milk comes in contact.

The outer cylinder is filled with water and steam applied to its entire length, heating the water and thus heating the thin sheet of milk. No steam comes in contact with the milk, as this has been found quite objectionable, especially where foul water and boiler compounds are used.

Very little steam is required for its use, generally  $\frac{1}{4}$  to  $\frac{1}{2}$  turn of the half-inch valve is found sufficient.

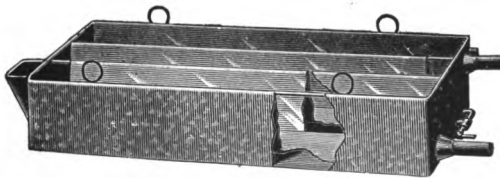
The heater may be attached to a rotary pump, as shown in the cut, or connected direct to the vat, where the gravity system is used.

### Sizes and Prices

No. 0.	Capacity, 500 lbs. milk per hour.....	\$18 00
No. 1.	Capacity, 2,000 lbs. milk per hour.....	20 00
No. 2.	Capacity, 3,500 lbs. milk per hour.....	22 00
No. 3.	Capacity, 6,000 lbs. milk per hour.....	25 00
No. 4.	Capacity, 8,000 lbs. milk per hour.....	30 00

# Tempering Vats

## The "Ideal"



This vat is made of galvanized iron outside and heavy tin inside. It is divided into compartments and has water space in partitions at the bottom and sides. It is furnished with steam and water connections and outlet for two separators. A noiseless water heater is attached, which prevents noise and gives a perfect circulation. They are made in three sizes.

### Sizes and Prices

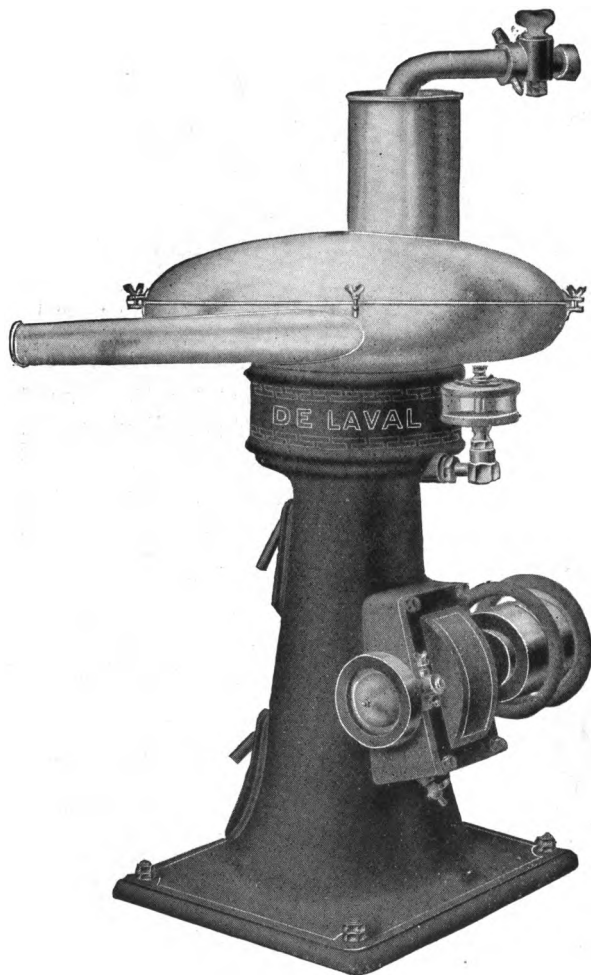
39 in. long, 24 in. wide, 9 in. deep.....	\$12 00
70 in. long, 35 in. wide, 8 in. deep.....	20 00
34 in. long, 18 in. wide, 6 in. deep. Fitted for 1 separator.....	7 50
34 in. long, 18 in. wide, 6 in. deep. Fitted for 2 separators.....	8 00

## Heater Vat Governor

These Governors are very convenient for regulating the supply of milk in the different styles of heater vats. They are automatic and need no watching.

Price, complete with ball, faucet and pipe connections.....\$4 00

## The DeLaval Milk Clarifier



The De Laval Centrifugal Milk Clarifier should be a part of the equipment of every milk dealer. It removes from milk all foreign substances not only visible "settling," but also blood corpuscles, pus and other undesirable substances which are likely to be present in all cows' milk, even that produced under "certified" conditions.

The De Laval Clarifier is a successful adaptation of the centrifugal principle to clarification. Its use does not change the milk in any way; the cream is not separated from the milk and then remixed as is the case when a cream separator is used for clarifying; it does not cause foam, nor affect the cream rising qualities of the milk. It is designed expressly for clarifying, and owing to its simplicity, durability, efficiency and light power requirements, it is the cheapest and best method of assuring clean milk.

### OPERATION.

The accompanying sectional view will help to make the operation clear. Milk, which may be either cold or warm, enters the bowl through the feed tube "A." It

strikes the augur "C" which has four threads and carries the milk to the bottom of the bowl. Milk then passes to the periphery through the grooves "D." There are eight of these grooves and they leave the shaft at a tangent. The object of the augur "C" and the tangential grooves "D" is to carry the milk to the bowl periphery at a low velocity in order to prevent separation. Arriving at "E" the milk partakes of the bowl motion, being assisted by four wings "F," and then begins its journey upward and inward, being forced by the milk back of it. It passes through the discs "G" and then up along the central shaft "H" to the outlet at the top. The covers are so designed that the milk strikes them without concussion and passes out without agitation which would cause foaming.

The practical operation of the Clarifier consists simply of putting it together properly, turning on the power, starting the oiling devices, and when

Write for Special Clarifier Catalog



## The DeLaval Milk Clarifier—Cont.

full speed is attained, turning on the milk. When started it will run for hours practically without attention, as the large space for slime at the periphery is sufficient for a four-hour run. When stopped the bowl of the largest contains only a few pints of milk, and the others correspondingly less, so that practically no milk is wasted.

Every milk dealer should use a De Laval Clarifier for the following reasons:

1st. Clarifies more thoroughly than any other machine or apparatus.

2nd. Does not change the physical characteristics of the milk.

3rd. Does away with troublesome foaming.

4th. Uses less than one-third as much power per 1,000 pounds of milk as a separator.

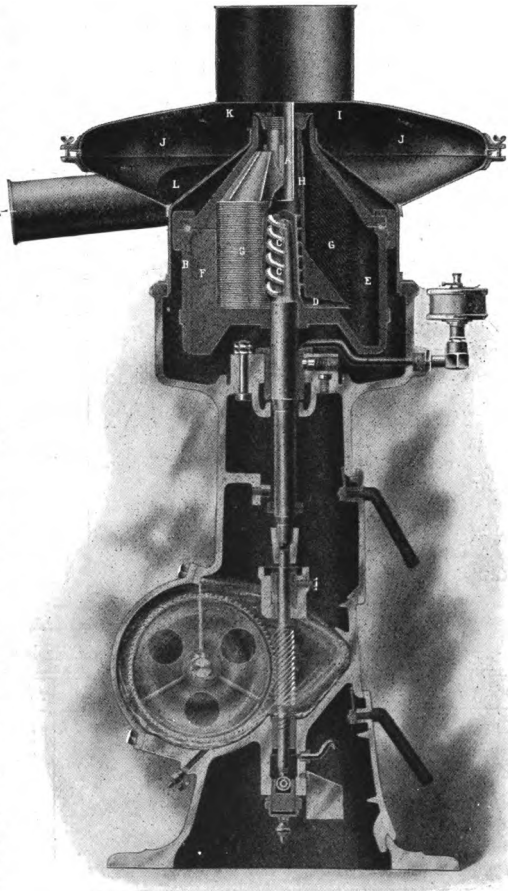
5th. Easier cleaned than any other form of clarifying or filtering apparatus.

6th. Perfect mechanical construction. Oiling practically automatic.

7th. Requires little attention while operating.

8th. Has a larger space to receive slime than a separator. Will run about four hours before necessary to clean.

9th. All things considered, it is the cheapest means of insuring clean milk.



### Sizes and Styles

The De Laval Clarifiers are made for belt drive, as shown in cuts, also with steam turbine for direct steam drive. We list two capacities, but other and smaller sizes are being arranged for.

No.	120	115	121	116
Drive .....	Belt.	Belt.	Turbine.	Turbine.
Capacity, lbs. per hour.....	12,000	8,000	12,000	8,000
Size of T. & L. pulleys.....	8x2	8x2	.....	.....
Speed of pulley.....	400	400	.....	.....
Price .....	\$800.00	\$675.00	\$800.00	\$675.00

Bowl speed, 4,000 R. P. M.

Write for complete specifications, also prices of smaller sizes if interested.

Write for Special Clarifier Catalog

# The De Laval Cream Separators

Wherein they excel all other makes

Their separation is the most thorough.

Their cream possesses greater "churnability."

Their capacities are much the greatest.

They require very much less power.

Their absolute safety is unquestionable.

They separate at a much lower temperature.

They require no special foundation.

Their oiling arrangements are the most modern and most practicable.

Their cream is the smoothest and most uniform.

They handle all conditions of milk with equal efficiency.

They leave nothing to the "judgment" of the operator.

Their requisite speed is at least one-third less.

They are the most easily and completely cleanable.

They are the most simple and most durable.

They make a longer continuous separation.

They remove more filth and fibrous matter.

The bowl is not too cumbersome to handle.

They fulfil the representations made for them.

Their merit is proved, not experimental.

They cost least in proportion to actual capacity.

They embody in their construction fully double the values in material, workmanship, and finish to be found in any other machine.

They do everything that any other machine can do, and enough more to save their cost each year of use.

They are sold subject to the guarantee of superiority in every material respect to any other machine made.

## Specifications of Alpha De Laval Cream Separators

### Steam-Turbine

	Acme Turbine	Alpha No. 1.	Alpha No. 2.
Height to Milk Faucet.....	3 ft. 6 in.	4 ft. 2 in.	4 ft. 6 in.
Height to bottom of Skimmed Milk Spout.....	2 ft. 4 in.	2 ft. 8 in.	3 ft. 0 in.
Height to bottom of Cream Spout.....	2 ft. 6 in.	3 ft. 1 in.	3 ft. 4 in.
Shipping weight (Bowl and Frame).....	426 lbs.	604 lbs.	639 lbs.
Shipping weight (Bowl only).....	44 lbs.	99 lbs.	124 lbs.
Speed of Bowl, revolutions per minute....	6,000	6,000	6,000
Approximate No. of lbs. of steam to run...	25	30 to 35	35 to 40

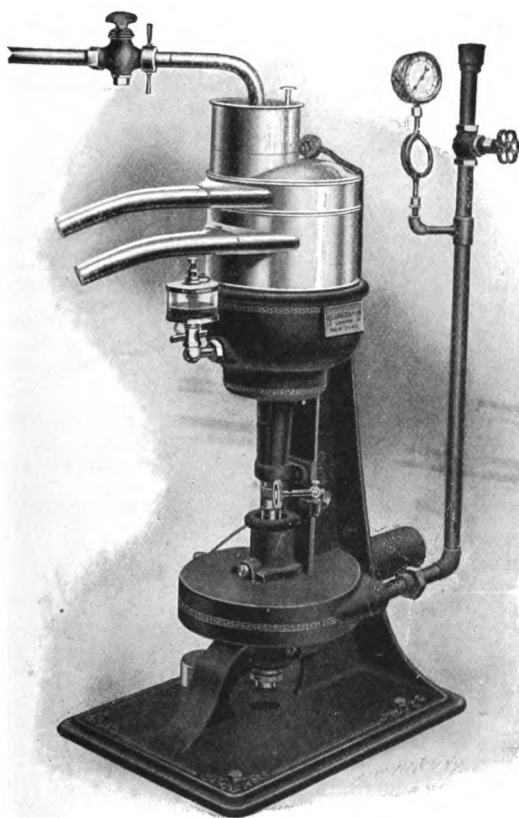
### Belt-Power

	Acme	Alpha No. 1.	Alpha No. 2.
Height to Milk Faucet.....	3 ft. 4 in.	4 ft. 2 in.	4 ft. 6 in.
Height to bottom of Skimmed Milk Spout.....	2 ft. 2 in.	2 ft. 8 in.	3 ft.
Height to bottom of Cream Spout.....	2 ft. 4 in.	3 ft. 1 in.	3 ft. 4 in.
Shipping weight (Bowl and Frame).....	484 lbs.	733 lbs.	758 lbs.
Shipping weight (Bowl only).....	44 lbs.	99 lbs.	124 lbs.
Speed of Bowl, revolutions per minute....	6,000	6,000	6,000
Diameter of Rope Pulley on Jack.....	16½ in.	16½ in.	16½ in.
Diameter of T. & L. Pulleys on Jack...	5 in.	5 in.	5 in.
Face of T. & L. Pulleys on Jack.....	3 in.	3 in.	3 in.
Speed of Jack, revolutions per minute ..	915	915	915
Horse Power to run.....	¾	1	1½
Weight of Jack.....	124 lbs.	124 lbs.	124 lbs.

Repairs: For list of Power Separator Extras consult index.

## DeLaval Cream Separators

"Alpha" Acme Belt and Turbine

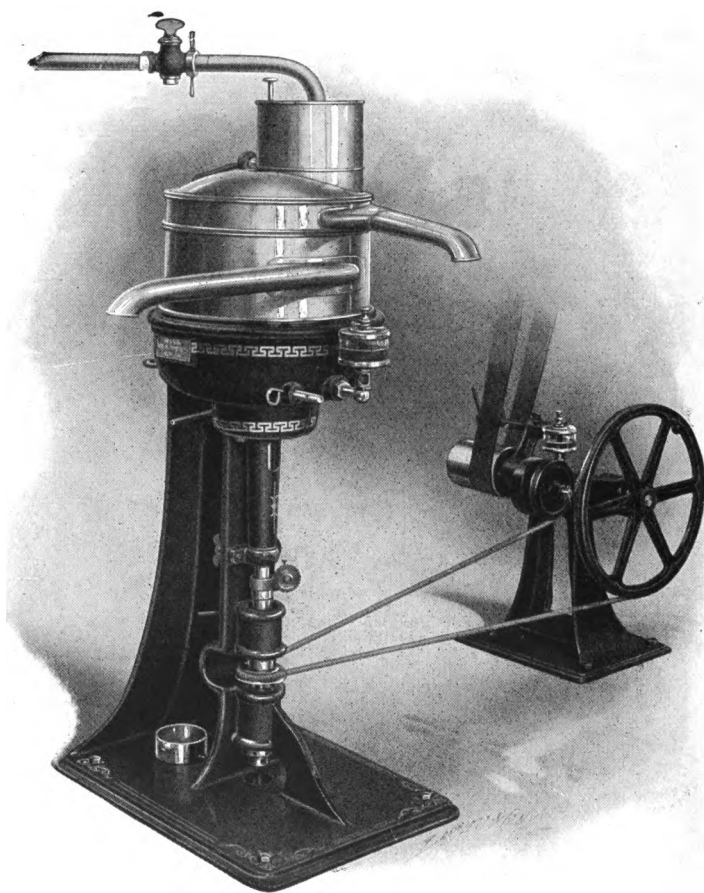


The DeLaval "Acme" machines are the smallest, lightest and most compact of all "power" cream separators, and do a marvelous amount of work for their size, using less than one horsepower. The above cut illustrates the "Acme" steam-turbine separator. The increased capacity of these machines is now 2,000 pounds per hour.

Acme Belt-Power Separators.....	Price	\$350.00
Acme Steam-Turbine Separators.....	Price	375.00

## DeLaval Cream Separator

### "Alpha" Belt-Power



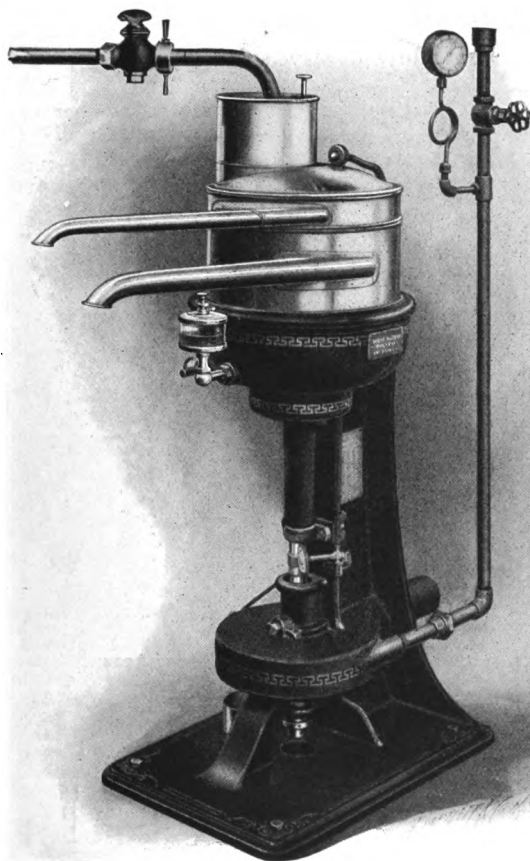
The above illustrates the "Alpha" No. 1 Belt-Power Separator, the No. 2 being in all respects identical other than in being made a little larger and heavier in construction and having greater capacity.

**Price.**

No. 1. Belt-Power Separator, actual capacity 3500 pounds per hour....\$500.00  
No. 2. Belt-Power Separator, actual capacity 5000 pounds per hour.... 750.00

## DeLaval Cream Separator

### "Alpha" Steam Turbine



The above illustrates the "Alpha" No. 1 Steam-Turbine Separator, the No. 2 being in all respects identical other than in being made a little larger and heavier in construction and having greater capacity.

**Price.**

- No. 1. Steam-Turbine Separator, actual capacity 3500 pounds per hour..\$525.00  
No. 2. Steam-Turbine Separator, actual capacity 5000 pounds per hour.. 800.00

# DeLaval Cream Separators

## Farm and Dairy Sizes

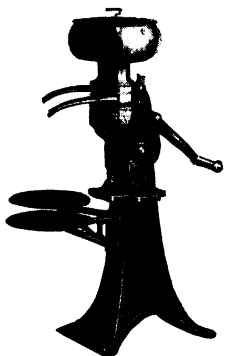
The first practical machine for the centrifugal separation of cream from whole milk was invented by Dr. Gustaf de Laval in 1878. After its introduction into America in 1883, and for nearly ten years thereafter, it was operated by power only and used solely by creameries and factories.

Many improvements have been made since then and the De Laval has become universally recognized as the most practical separator for the farm and dairy, as well as for the factory and creamery, and is to-day used in every part of the civilized world.

From a mechanical standpoint the De Laval is as near perfect as it is possible to make it. Absolutely perfect in skimming efficiency, built as accurately as a watch, with durability displayed at every point, it readily shows what over thirty years of earnest effort toward the attainment of a perfect cream separator has been able to accomplish.

The De Laval line is very complete and includes a number of styles and capacities of machines. No matter how large or small the dairy may be, the improved De Laval line has a machine exactly suited for it.

A large De Laval catalogue, very fully illustrating and describing the complete line, as well as the detailed construction of De Laval farm and dairy size machines, will gladly be mailed to anyone requesting it.



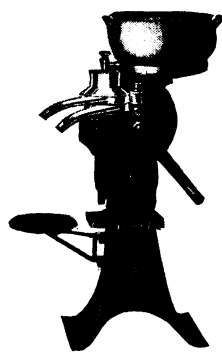
Improved No. 4.  
Actual capacity, 135 lbs.  
per hour.

Improved No. 5.  
Actual capacity, 200 lbs.  
per hour.



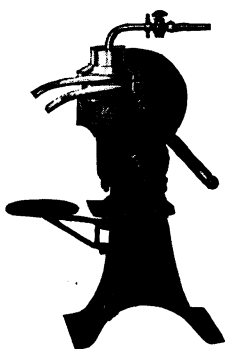
Improved No. 10.  
Actual capacity, 335 lbs.  
per hour.

Improved No. 12.  
Actual capacity, 450 lbs.  
per hour.



Improved No. 15.  
Actual capacity, 675 lbs.  
per hour.

Improved No. 17.  
Actual capacity, 900 lbs.  
per hour.



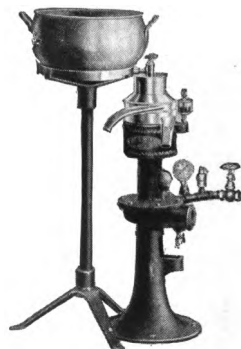
Improved No. 22.  
Actual capacity, 1,350 lbs.  
per hour.

Special vat, holding about 25 gallons, and equipped with faucet, is furnished with this machine.



Improved No. 25, Steam  
Turbine.

Actual capacity, 1,350 lbs.  
per hour.



Improved No. 20, Steam  
Turbine.

Actual capacity, 900 lbs.  
per hour.

Improved No. 19, Steam  
Turbine.  
Actual capacity, 675 lbs.  
per hour.

## DeLaval Whey Separators

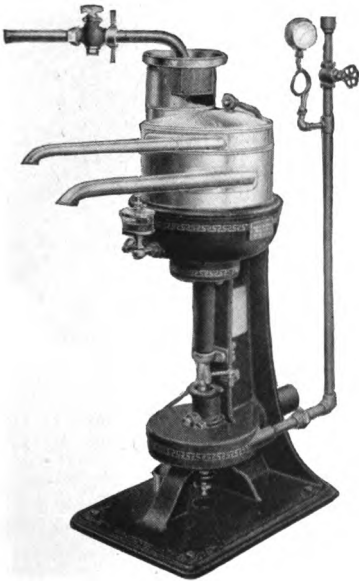
Cheese makers frequently lose as much butter fat in their whey as butter makers would from their whole milk without a De Laval cream separator. This is particularly apt to be true where the milk made into cheese is very rich in butter fat.

The De Laval Whey Separator is the only thoroughly efficient and the most easily operated and cleaned machine, and is practically automatic.

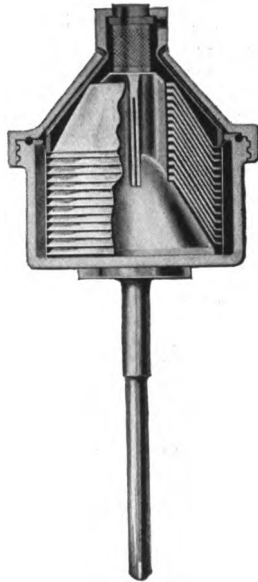
### Points of Superiority

First. It produces heavier cream, thus eliminating excess moisture in the butter. Second. It has large capacity. Third. It does not clog up with casein or curd. Fourth. It runs at a very low speed and is equipped with an automatic oiling device so that the machine requires practically no attention. Fifth. There are no rivets, hinges or loose parts in the bowl to be weakened by the action of acid in the whey. Sixth. It has no accelerating device to give out, thus necessitating large repair bills.

A folder illustrating and describing the machine in detail will be mailed upon request.



Steam Turbine style.  
For direct steam connection.  
(Also made to be driven by belt power.)



Sectional view of De Laval Whey  
Separator Bowl.

DeLaval Whey Separators give a uniformly heavy cream, skim clean, don't clog up, require little power and are practically automatic

## Weigh Cans



### Low Down Style

These cans are larger in diameter than the old style. Round weigh cans (see illustration) are but 24 inches high, strongly made of best quality XXXX tin plate; bottoms are slanting to facilitate draining. All cans fitted with 3-inch Perfection Gates.

40 gallons.....	\$10.00
60 " .....	11.00
80 " .....	13.00

### Rectangular Weigh Cans

These are made single with one or two gates and also double, having one gate in each section as shown in cut. All regular cans are 30 inches high. Other dimensions shown in table.

#### Made of 6X Tin Plate.

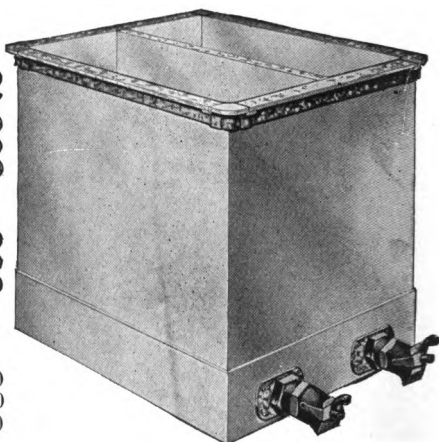
	Capacity in lbs.		
Length and Width.....	800	1000	1500
.....34"x26"		34"x30"	42"x36"
One gate .....	\$26.00	\$30.00	\$37.00
Two gates ....	30.00	35.00	42.00
Double can ...	33.00	42.00	47.00

#### Made of Heavy Tinned Steel.

One gate .....	35.00	42.00	49.00
Two gates ....	37.00	47.00	54.00
Double can ...	40.00	52.00	58.00

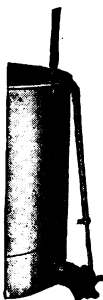
#### Made of Heavy Copper, Tinned Both Sides.

One gate .....	56.00	60.00	72.00
Two gates ....	61.00	67.00	80.00
Double can ...	67.00	77.00	90.00



#### Strainers to Cover One-Half of Can.

6X Tin .....	4.25	5.25	6.50
Heavy Steel .....	6.00	7.50	10.00
Heavy Copper .....	9.00	12.00	14.00



### Weigh Can Gate Opener

#### The "Ideal"

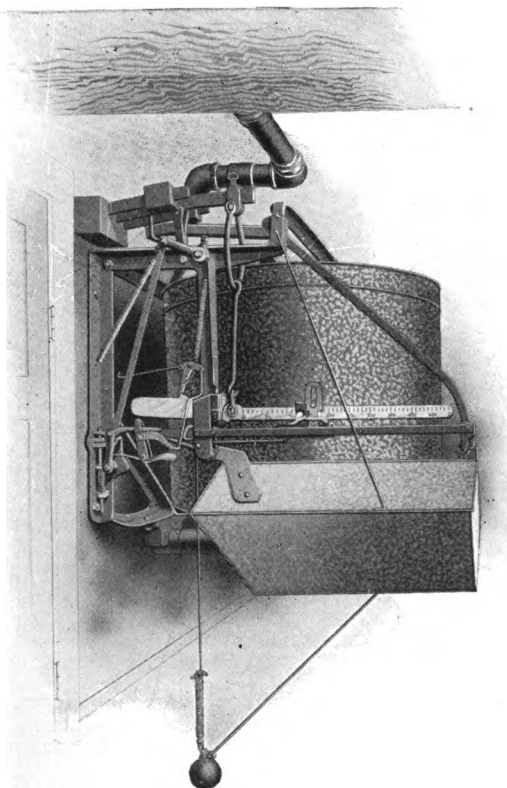
It is so made that it can be attached to any weigh can. The connecting rod is of the telescope pattern and can be adjusted to any desired length in a few seconds of time. It is strongly made and fully galvanized and will last a lifetime with proper use.

Price..... each, \$2.50



## Skim Milk Weigher

### The "Ideal"



This machine is made especially for the distribution of skimmed milk to the patrons of a creamery. It is simple in construction and easy to operate. It takes up small space and is easy to set up. It is thoroughly practical, strong and durable. It has a capacity of 10,000 pounds of milk per hour, and this can be increased if necessary. The entire machine is constructed of iron and brass, with the best chilled steel bearings on scales.

As its name implies, the machine actually weighs the milk. The weighing tank is adjusted so as to swing on a scale beam.

Each machine is provided with a set of V-shaped checks, put up in a convenient case, each representing a certain amount of milk.

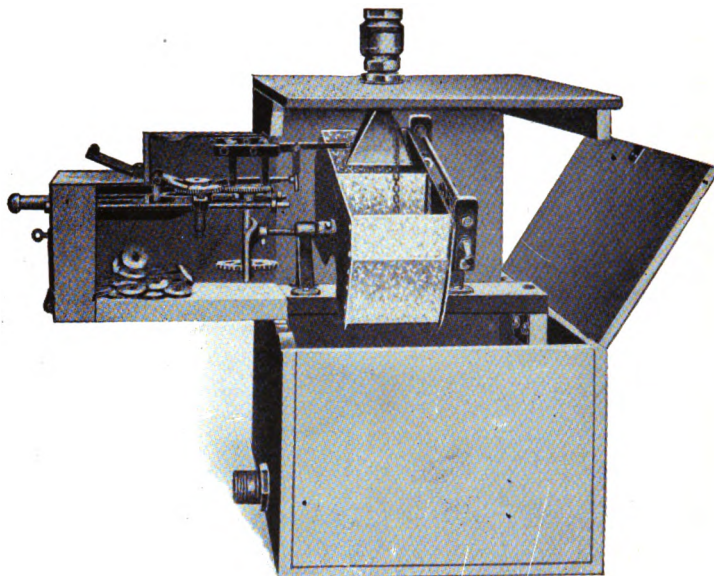
It is absolutely impossible to get more than the amount of milk represented by the checks. The Ideal Weigher cannot be bribed. It will show no partiality.

The No. 2 machine is made exactly like the Ideal No. 1, except that it is enlarged, the capacity greatly increased, and all parts proportionately strengthened. The square weighing can allows much larger capacity in the same space. The inlet and outlet are much larger, and the machine fills and empties very rapidly. The checks run in sizes up to 500 pounds, and the machine has ample capacity for several separators.

Price, No. 1, Round Can, 400 lbs. capacity.....\$100.00  
 Price, No. 2, Square Can, 500 lbs. capacity..... 125.00

# Skim Milk Weigher

Curtis' Automatic



This machine can be set inside or outside the building. The inside is preferable, as this lessens the danger of freezing in winter.

The skim milk is elevated to overhead tanks by pumps, the machine working on the gravity system.

Overhead tanks with jet pump or rotary pump attachment is necessary where this machine is used. A 12-inch elevation of the bottom of the tank above the valves on the weigher is sufficient.

With  $1\frac{1}{2}$ -inch inlet, and ample outlet, the capacity is unlimited. It will handle more milk than any other weigher or pump made.

The illustration shows the tipping buckets and the possibilities of the machine, and it will readily be seen that when the skim milk flows into the buckets on one side, it will, as soon as that side has received the required quantity, oscillate to the other bucket; this lifts the chain which holds the valve and allows the milk to escape from the bucket on that side, and the bucket being thrown over the opposite bucket will fill, as the change of position of bucket brings inlet valve first on one side and then on the other.

Full and complete directions for setting and operating are sent with each weigher. Every machine is adjusted before sending out, and all that is necessary is to set it in its place according to directions, making the pipe connections, and the machine is ready for operation.

No. 1, Capacity 1 Separator.....	\$ 75.00
No. 2, Capacity 2 " .....	85.00
No. 3, Capacity 3 " .....	100.00
Extra checks, per dozen.....	.50

## The "Barber-Colman" Check Pump

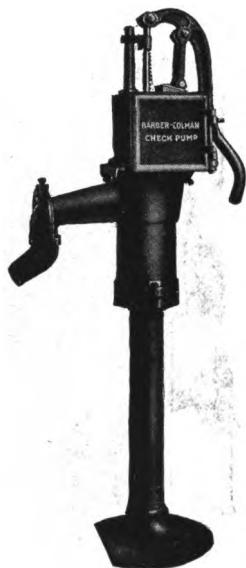
For measuring the skimmed milk or whey back to the patrons of Creameries and Cheese Factories

The Barber-Colman Check Pump is simply an ordinary suction and force pump with a device added at the top which locks it and prevents its being operated until a check is dropped into the slot on top of the square box. Then if the T-rod is pulled, the pump unlocks and as many strokes can be taken as necessary to throw the amount of milk indicated by the check. By changing the adjustment of the stop collar, the length of the stroke can be varied to cause the pump to throw any desired percentage of the face value of the checks. When all the strokes permitted by the check have been taken, the pump automatically locks, and if the T-rod is then pulled again, the check drops from its position in the mechanism into the check tray, which is locked up to prevent the patrons from using the same check over again. If the T-rod is pulled again, or any number of times after the pump is locked, it will not unlock the pump unless another check is dropped in.

If the person operating the pump neglects to take full strokes, the amount thrown at each stroke will be less, but the number of strokes which he can take before it locks will not be any greater. Consequently, in order not to cheat himself he must take full strokes. If the milk in the vat runs so low that the pump sucks air and foam, and does not throw the full proportion of solid milk, the operator of the pump will instantly know it by the feeling of the stroke as he pumps, and he should then wait until more milk has run into the vat.

Price, each complete.....\$35.00

List of Extras furnished upon application.

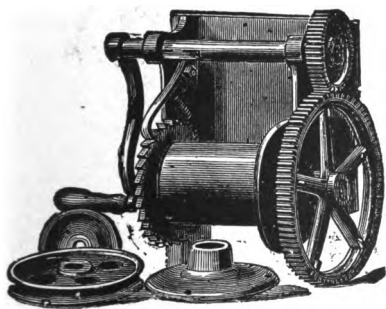


## Hoisting Crane Irons

For Handling Cream and Milk Cans

The accompanying cut shows the details of our hoisting crane irons, complete, as we ship them out. Hoisting crane irons, complete, consist of two shafts, four journal boxes, two geared wheels, one crank, two grooved pulleys. These are all finished and fitted, mounted together on a block of hardwood ready to attach to the upright frame by simply bolting them.

Price .....\$8.50



## Milk Can Hooks

To use in connection with the Hoisting Crane Irons.  
Complete, with cross-bar and 25 ft.  $\frac{3}{4}$ -inch rope....\$4.00



# Starter Cans

## The "Victor"

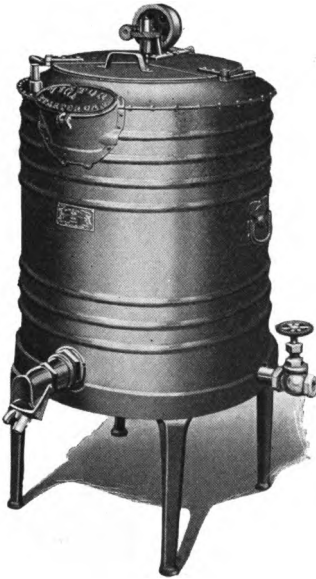


Illustration of 30-Gallon Size, on Legs

The gearing is of the spur and worm type, and noiseless. The can requires very little power. Belts to the line-shaft from any direction. Gear is attached to the cover, which clamps to top rim of can and holds fast at any point.

We furnish it in two styles; on legs or casters. Cans with legs are fitted with sanitary, enamel lined "perfection" gates.

### Sizes and Prices

No.	Gallons	Mounting	Shipping Weight, Lbs.	Price
0	10	Legs	125	\$35 00
1	20	Legs	140	42 50
2	20	Casters	115	40 00
3	30	Legs	160	50 00
4	30	Casters	125	47 50
5	50	Legs	220	65 00
6	50	Casters	185	62 50

The construction of this can meets every requirement of the high-grade creamery apparatus. We have improved and refined the construction until it far surpasses any can of its type on the market.

The outside cylinder is made double; first there is a shell of No. 18 galvanized steel plate, inside of which is a lining of sheet copper for protection against rust. Between the steel and copper we place Neponset insulating paper.

The inner can is made of heavy copper, tinned. It is supported from the bottom as well as being bolted at the top. The bolts make it easy to remove the inner can for repairs, if necessary.

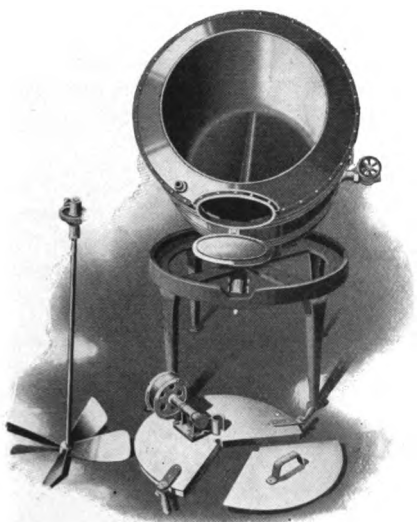
The steam and water inlet is through a special casting, strong and rigid and not liable to break away. On the end of the inlet pipe is a special steam muffler to prevent noise when heating.



Illustration of 10-Gallon Size

## Victor Starter Can

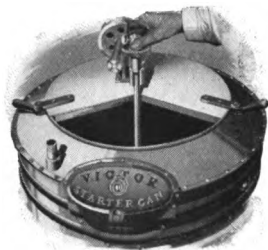
### Special Features



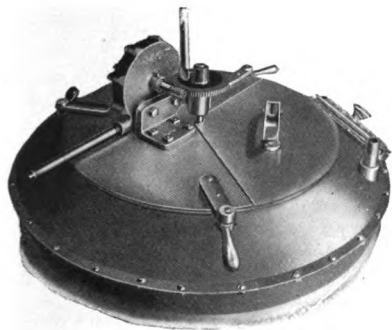
The features of convenience and sanitation have received careful consideration in the design of the Victor Can. The illustration at the left shows the several parts of the can. The cover is in two sections, one of which clamps to the top rim of the can with three cam fasteners, and the other is a wedge-shaped section which is removable without disturbing the gearing, so as to permit examination of the starter, take temperature, etc.

The stirring device is similar to a propeller. It rotates at the bottom, creating currents that keep the whole mass heating or cooling uniformly. By reference to the smaller picture it will be seen how easily the central vertical shaft and agitator is removed. The bearing is slotted, and to remove agitator it is only necessary to lift the shaft about three inches, then slip the shaft through the slot. The smaller illustration also shows the large opening when the loose section of cover is removed.

The absence of bearings inside the can and the smooth finish of all parts facilitates the daily cleansing and sterilizing which an appliance of this kind should receive in order to assure pure and good flavored starters.



## Turbine Drive for Starter Cans



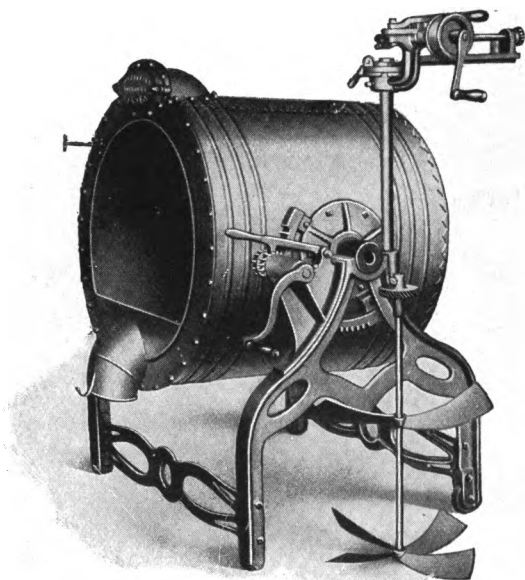
The cut illustrates top of Victor Can with steam motor in place of usual pulley; an ideal arrangement where location of can is not convenient to shaft, also where starter is made while engine is not running. Motor is high grade; has brass steam wheel about 5 inches in diameter on shaft running in babbitted bearings. To connect motor up, two pieces of  $\frac{1}{2}$ -inch steam hose are furnished for live and exhaust steam connections, which are made to vertical and horizontal pipes, respectively. Gear ratio is wide and motor requires very little steam.

### Prices

Steam Motor with Victor Can, as illustrated.....\$10.00  
 Steam Motor with Trunnion Can, attaches to frame in place of pulley..... 12.50

## Starter Can

### The "Victor" Trunnion



Patented Feb. 26, 1907.

Showing can tipped for emptying and cleaning.

The design of this can is a radical departure in starter can construction. It consists of a double jacketed cylinder with gudgeon bearings mounted on a frame.

From a sanitary standpoint it leaves nothing to be desired. The contents of the can are poured from a spout at the top. There are no gates or faucets, which are difficult to clean. There are no bearings attached to the inner can. It is, in fact, a smooth surface without any projections or crevices to prevent cleaning.

Many conveniences have been added which add much to the serviceableness of the can. The agitator can be thrown in or out of gear by a small clutch; waste water is all carried away through a single outlet and a conductor will take care of all the water, keeping the floor clean and dry.

When pouring starter the can is swung by a crank. A hook is provided on which to hang a pail. The can is nicely balanced and the pouring easily regulated by the crank.

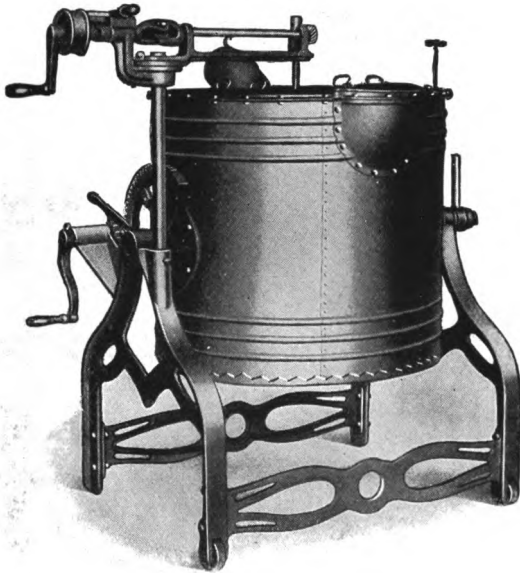
The Trunnion Can is made throughout of the very best material obtainable, and is put together in the best possible manner. The inner can is of heavy tinned copper. It is bolted to the jacket at the top and can be easily removed for repairs. The bottom rests in a special support which does not interfere with the expansion and contraction.

The outer jacket is of heavy galvanized steel plate, backed up with a sheet of insulating paper and lined with copper, making it as near rust proof as it is possible to build. A double jacket and insulation hold temperature much better than a single jacket. The cover is also fully insulated.

The gears are machine cut. Steam and water pipe passes through the hollow gudgeon and causes no strain upon the can. A special brass steam muffler makes the heating noiseless. Carrying all the weight and strain of the gears, pipes, etc., on the framework instead of on the cylinder removes practically all the jar, twisting and vibration, and adds much to the life of the can.

## Starter Can

### The "Victor" Trunnion



Patented February 26, 1907  
Showing can upright and gears connected

No expense has been spared to make this the strongest, most convenient, most sanitary and most durable starter can.

#### Sizes and Prices

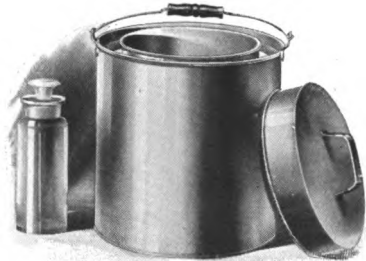
30 Gallons, Shipping weight 370 pounds.....	\$ 85.00
50 Gallons, Shipping weight 400 pounds.....	100.00
75 Gallons, Shipping weight 600 pounds.....	120.00
100 Gallons, Shipping weight 775 pounds.....	140.00

Steam Motor—See description on page 99, \$12.50

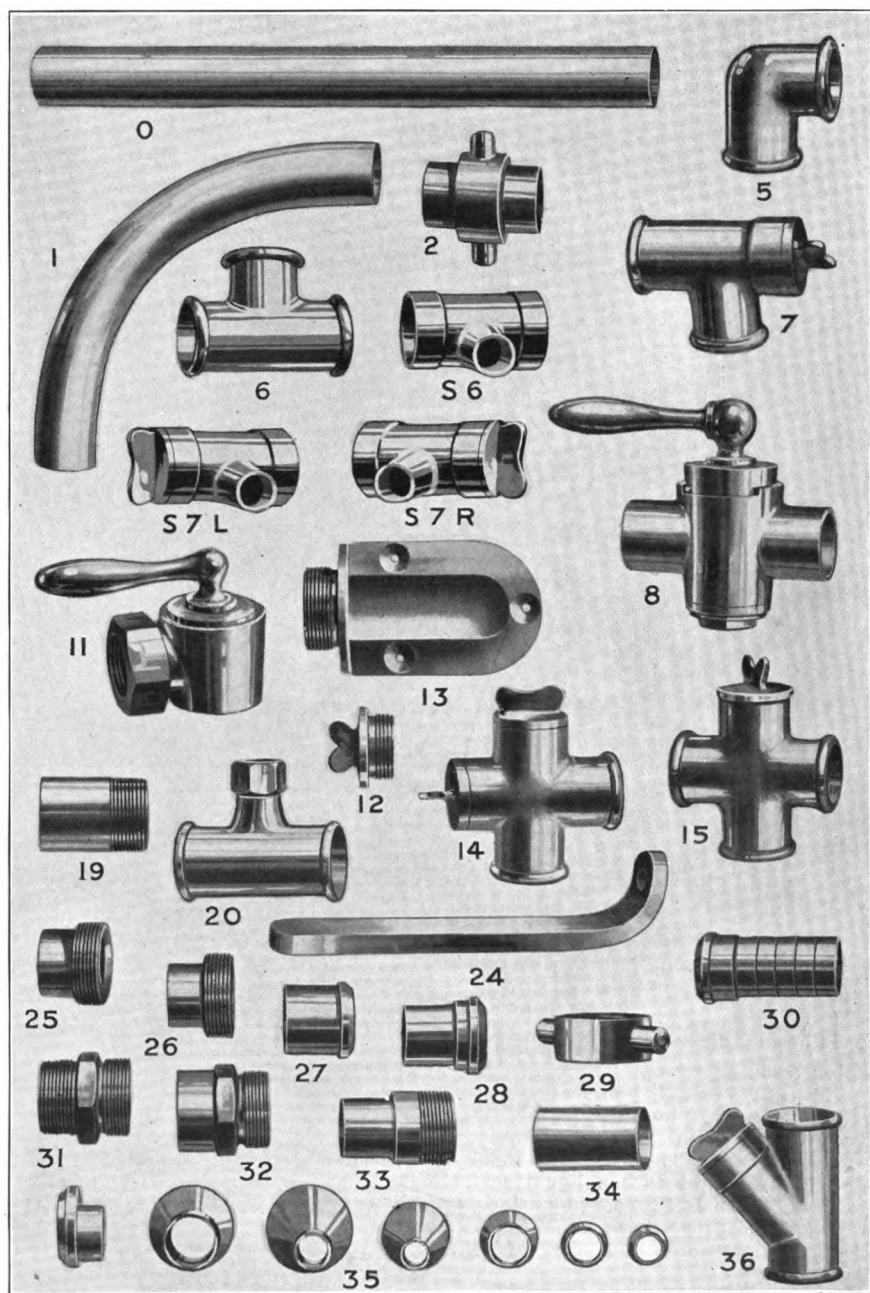
## The Alaska Culture Can

For holding temperature of mother starters at desired point for best development. Consists of double walled can of heavy tin plate, insulated with best hair felt. Cover is also insulated and seals airtight with a liquid seal. A round can has less exposed surface and holds temperature better. We furnish with each can three one-quart jars, glass stoppered.

Price, Complete, \$8.00.



# C. P. Sanitary Pipe and Fittings





## Sanitary Fitting List

Numbers in left-hand column refer to illustrations on opposite page. For detailed descriptions of fittings see following pages.

For made up piping add 20% to list.

No.	DESCRIPTION	¾"	1"	1¼"	1½"	2"	2½"	3"
0	Sanitary Copper Tubing, tinned	\$0 40	\$0 45	\$0 50	\$0 60	\$0 80	\$1 00	.....
1	Bend, made of Sanitary Copper Tubing .....	1 60	1 75	2 00	2 50	3 25	5 00	.....
2	Union, complete .....	1 50	1 60	1 85	2 10	3 00	4 00	.....
5	Ell, plain .....	75	90	1 00	1 20	1 60	2 75	.....
5½	45° Ell, (Not shown in cut) .....	75	90	1 00	1 20	1 60	2 75	.....
6	Tee, plain .....	1 00	1 20	1 50	1 65	2 25	3 50	.....
S6	Reducer Tee, 1" outlet .....	.....	.....	.....	2 00	2 75	.....	.....
S7L	Reducer Ell, L. H. 1" outlet .....	.....	.....	.....	3 00	3 50	.....	.....
S7R	Reducer Ell, R. H. 1" outlet .....	.....	.....	.....	3 00	3 50	.....	.....
7	Ell with Stopper .....	1 40	1 50	1 75	2 50	3 00	3 75	.....
8	Valve .....	6 00	6 50	10 00	12 50	16 00	20 00	.....
11	Outlet Valve, standard pipe thread	5 00	5 50	8 50	12 00	15 50	20 00	.....
12	Stopper for Nos. 7, 14 and 15 .....	60	70	80	90	1 00	1 50	.....
13	Outlet for Tank, san. union thread .....	2 00	2 25	2 50	2 75	3 00	4 00	.....
14	Ell with 2 No. 12 stoppers .....	2 00	2 50	3 25	4 00	5 00	6 00	.....
15	Tee with 1 No. 12 stoppers .....	1 75	2 25	3 00	3 25	4 50	5 50	.....
19	Adapter Nipple, outside pipe thread	1 25	1 50	1 60	1 70	1 80	2 00	.....
20	Thermometer Holder .....	1 60	2 25	2 75	3 00	3 25	3 50	.....
24	Spanner Wrench for Unions .....	1 00	1 00	1 00	1 00	1 00	1 00	1 25
25	Threaded Sleeve, inside recess .....	45	50	60	70	90	1 25	.....
26	Threaded Sleeve, outside recess .....	45	50	60	70	90	1 25	.....
27	Plain Sleeve, inside recess .....	30	30	35	40	60	75	.....
28	Plain Sleeve, outside recess .....	30	30	35	40	60	75	.....
29	Union Nut .....	75	80	90	1 00	1 50	2 00	2 50
30	Hose Connector .....	90	1 05	1 10	1 30	1 60	1 75	.....
31	Hex. Outside Pipe Thread .....	70	80	1 00	1 40	1 75	2 50	3 00
32	Hex. Inside Pipe Thread .....	80	90	1 20	1 50	2 00	3 00	3 50
33	Adapter Nipple .....	1 25	1 50	1 60	1 70	1 80	2 00	.....
34	Coupling .....	1 25	1 50	1 60	1 70	1 80	2 00	.....
35	Reducers, See separate list page 107 .....	.....	.....	.....	.....	.....	.....	.....
36	Clean Out Fitting .....	.....	2 00	2 25	3 00	3 50	5 00	.....

# Sanitary Pipe and Fittings

## Detailed Descriptions

**No. 0. Sanitary Copper Tubing.** Cold rolled, seamless copper tubing, tinned both inside and out. The diameters listed are inside measurements.

**No. 1. Bend.** Advantageous for long pipe lines in preference to the regular ells. The expense with the two unions which are necessary is about 50 per cent higher than for an ell. Below we give the approximate radius of each sized bend in inches:

$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
7	7	$7\frac{1}{2}$	8	9	9

**No. 2. Union Complete.** Made in all sizes. No gasket is required to make a tight joint, as the two faces are ground to a seat. Fittings Nos. 25, 27 and 29 make a complete union. Other union combinations may be made with Nos. 26, 28, 31, 32 or 35.

**No. 5. Plain Ell.** Sanitary; the inside is machined so that there are no rough places to interfere with cleaning. In installing it in a pipe line one or more unions should be located close to it so that it may be cleaned and inspected easily. Nos. 26, 28 or 33 may be soldered to the No. 5 and some very useful combinations can be worked out by the use of these fittings.

**No. 5½. Forty-five Degree Ell.** This fitting is the same in all respects as the No. 5, excepting the angle. Used for making short cuts, etc.

**No. 6. Plain Tee.** Same construction as the No. 5 ell; a very convenient fitting and will answer in many cases just as well as the more expensive No. 15 tee. It is a very simple matter to transform a No. 6 into a threaded end fitting by use of the No. 26 threaded union sleeve. The sleeve fits into the pipe recess in the tee and is soldered and sweat in exactly the same as the end of a sanitary tube, making a very neat and useful fitting.

**Reducing Tees and Ells.** Used for take-offs from main feed line to separators, freezers or other machines. Where two or more machines are fed from one supply the header line should as a rule be larger in diameter than the outlet. These fittings are made with the outlets eccentric, and the pipe line will drain dry. The tee can be turned end for end so that the outlet will always be at the bottom, but the ell for

the end of the pipe line must be always ordered for right or left hand so as to have the outlet at the bottom. Please observe carefully that the outlet of these fittings is always 1 inch, while the run may be either  $1\frac{1}{2}$  or 2 inches.

**No. 7. Ell with Stopper.** Its use is apparent at a glance. When installing it care should be taken that the stopper outlet be turned in the proper direction so that pipe line can be thoroughly cleaned. When convenient to place a union close to the ell the No. 7 will answer the purpose just as well as the No. 14, and at a saving in cost.

**No. 8. Valve.** Our valve has a large plug with a round opening so that when the valve is opened there is a straight passage through it of the same diameter as the pipe line. Both ends of the valve are recessed for sanitary tubing. When unions at one or both ends of the valve are wanted, our No. 26 and No. 28 union sleeves, soldered directly to the valve, make a very desirable and strictly sanitary combination. The No. 33 adapter may be sweat into the recess and connection thus made with iron piping.

**No. 11. Outlet Valve.** Used for feeding freezers and other machines. It is regularly made with a standard iron pipe thread.

**No. 12. Stopper.** This stopper is the same as used with the No. 7, No. 14 and No. 15 fittings.

**No. 13. Outlet for Tanks.** Sanitary union thread, so that a No. 29 union nut and a plain sleeve, either No. 27 or No. 28, completes a union. It is a very convenient device, as it forms a well in the bottom of the vat that is very desirable.

**No. 14. Ell with Two Stoppers.** The two stoppers enable the pipe to be opened and cleaned in both directions.

**No. 15. Tee with One Stopper.** Stopper is opposite the outlet. Care should be taken in installing it to see that provision is made for passing the brush through the pipe line in the direction of the run.

**No. 19. Adapter Nipple.** Used for connecting sanitary piping with a common pipe fitting. The threaded end is standard pipe thread and the plain

end is recessed for sanitary tubing. The No. 33 adapter is the same as the No. 19, excepting that the plain end is turned down so that it slips into the recess on any of the recessed fittings—as for instance Nos. 2, 5, 6, 7, 8, etc.

**No. 20. Thermometer Holder.** Recessed on both ends for sanitary tubing, has a stuffing box to hold a floating style thermometer.

**No. 24. Spanner Wrench for Unions.** This is an accessory to the line of fittings, and is a great convenience for screwing and unscrewing unions. Has plenty of leverage to unscrew the union nut and does not mar the finish.

**No. 25. Threaded Sleeve.** With inside recess. This is a part of a complete No. 2 union. It is listed and furnished separately, as there are many cases where it is convenient to make up unions in combination with Nos. 27, 28 and 29.

**No. 26. Threaded Sleeve.** With outside recess. Instead of being recessed in the inside to receive sanitary tubing it is turned down on the outside so that it slips into any other recessed fitting. For instance, it may be sweated directly to fittings Nos. 5, 6, 7, 8, 14, 15, 19 and 20, and a union nut and plain sleeve will complete the union.

**No. 27. Plain Sleeve.** Inside recess. This is the plain end of a regular union and in combination with a No. 29 and a No. 25 makes up the No. 12 union. May be used in combination with No. 25, No. 26 and No. 31 or No. 32, to make up special unions.

**No. 28. Plain Sleeve.** Outside recess. Same as No. 27, excepting that instead of being recessed to receive the sanitary tubing, it is turned down on the outside to slip into any recessed fitting.

**No. 29. Union Nut.** The purpose of this fitting is plain. It is a part of the regular No. 2 fitting, but is listed separately so that it can be made up into other union combinations. Screws onto Nos. 25, 26, 31 and 32.

**No. 30. Hose Connector.** Interchangeable with plain end of the union. The No. 29 union end slips over this fitting, and screws onto Nos. 25, 26, 31 and 32.

**No. 31. Hex.** One end has a union thread and the other a standard pipe thread. It is used to make connections to machines and vats that have standard pipe thread outlets with inside thread.

**No. 32. Hex.** One end has a sanitary union thread and the other a pipe thread. Use is similar to No. 31, and is used wherever it is desired to make connection to a standard pipe outside thread.

**No. 33. Adapter Nipple.** Made with the plain end turned down on the outside so as to slip into any recessed fitting. The thread end is standard pipe thread. Used in connection with one of the several recessed fittings, as for instance 5, 6, 7, 14 and 15, according to the conditions in each case, a very neat and sanitary connection to an iron pipe fitting can be made. It can also be used with Nos. 2, 8, 25, 27 and 35. A very useful fitting.

**No. 34. Coupling.** Both ends recessed for sanitary tubing; can be used where a union is not necessary.

**No. 36. Special "Y" Clean Out.** Designed so that long lines of piping can be cleaned without taking down. The outlet is fitted with No. 12 stopper at an angle of 45 degrees from the run, and by removing the stopper a wire-handled brush can be inserted in the tubing so as to clean it perfectly. These fittings should be installed not over six feet apart, so that every part of the tubing can be reached with a long-handled brush.

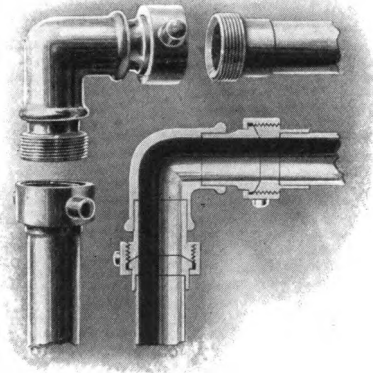
**No. 35. Reducing Sleeve.** Reducers are made eccentric so that the bottom of a pipe line will be level and will not form a pocket. Used same as plain sleeve end of union. Reducers are made in all pipe sizes shown in the list, reducing to all sizes smaller.

Price List No. 35 Reducing Sleeve.

SMALL DIAMETER	LARGE DIAMETER					
	1"	1¼"	1½"	2"	2½"	3"
¾"	\$0.90	\$0.95	\$1.05	\$1.35	\$1.60	\$2.00
1"		1.00	1.10	1.35	1.60	2.10
1¼"			1.15	1.40	1.65	2.15
1½"				1.50	1.70	2.20
2½"					2.00	2.50
						2.75

## Sanitary Pipe and Fittings

That pipe lines for conducting milk, cream, or other liquids of like character should never be constructed by common iron pipe and fittings, either "black" or "galvanized," is a fact well known to all dairymen.



By the use of C. P. sanitary fittings, in connection with C. P. sanitary piping, milk can be conducted as far as desired through a pipe line, every part of which can be kept as clean and as sterile as a surgeon's instrument; the plant can be arranged for convenience and economy of operation without sacrifice of sanitary considerations. The value of such a line of fittings to the dairy industry is very great. Sanitary plant construction is now much simplified.

### Economy

C. P. fittings are more expensive in first cost than common fittings, but they are most economical in the

end. When properly erected, sanitary piping is permanent and will outlast all other machinery in the plant. It will never rust.

We print herewith a complete list of this line of pipe and fittings. We make a full line in six sizes from  $\frac{3}{4}$  inch to  $2\frac{1}{2}$  inch diameter. By making the fittings in various combinations every need of the dairyman is met as fully as the needs of the steam fitter are met by common pipe and fittings.

### Material Used In Sanitary Pipe and Fittings

For our piping we have adopted hard drawn seamless copper tubing, electro tinned inside and outside. The sizes listed are inside diameters.

The fittings are made of brass. In manufacturing them we use machinery specially built for the purpose.

### Design and Finish

The opening in all fittings, whether valves, tees, ells, or unions, is round. The brass castings are made with a core and each fitting is then bored on a special machine making a smooth interior surface. Every fitting we make is bored. Special attention has been given to the finish. Everything is thoroughly nickel plated. We do not make tinned fittings.

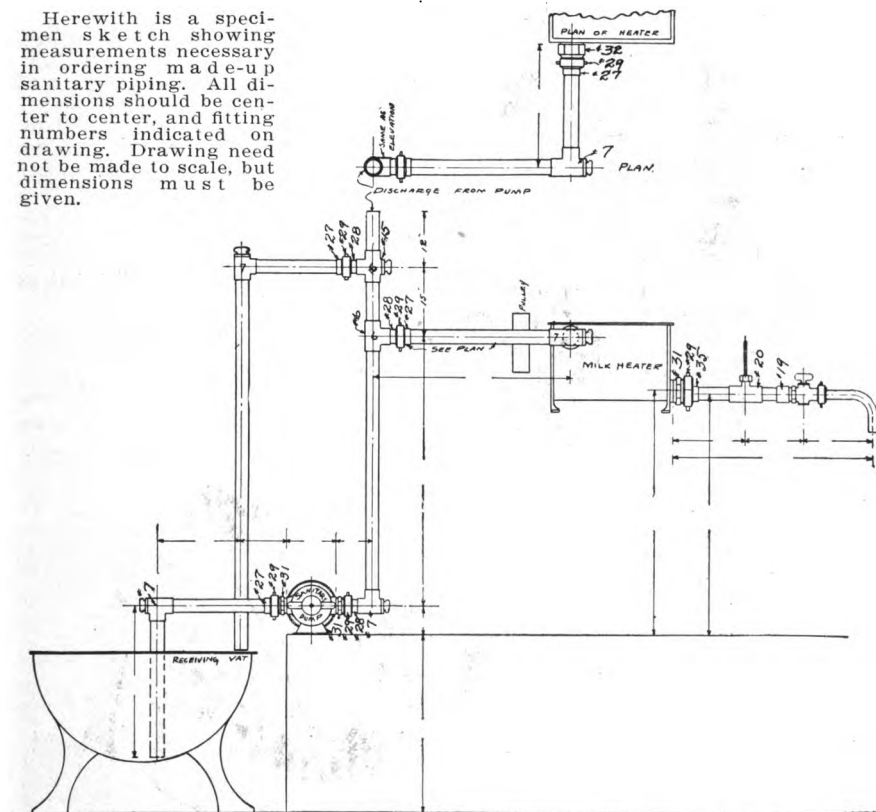
## Made Up Piping

C. P. sanitary piping can be made up and erected by the local plumber or by anyone handy with a blow torch. It is a simple matter but a great deal depends upon the joints being properly made. On large or complicated installations it is generally advisable to make up the piping where erected, but on simple jobs a saving can be made by ordering piping made up. In ordering made-up piping, please send sketch showing dimensions; where turns are made, give dimensions to center of piping, not over all. Specify diameter of piping wanted and mark fitting numbers on the sketch, unless you wish us to use our best judgment. We do not guarantee made-up piping to fit, except that it will be as ordered.

Send us sketch of your plant and we will quote price on complete sanitary equipment.

## Sanitary Pipe and Fittings

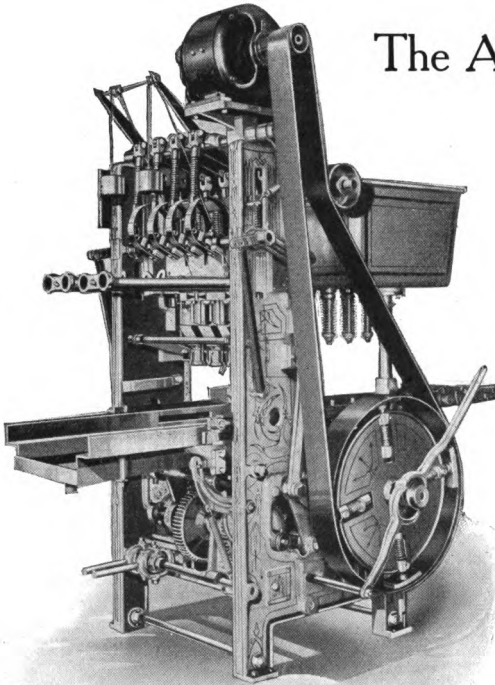
Herewith is a specimen sketch showing measurements necessary in ordering made-up sanitary piping. All dimensions should be center to center, and fitting numbers indicated on drawing. Drawing need not be made to scale, but dimensions must be given.



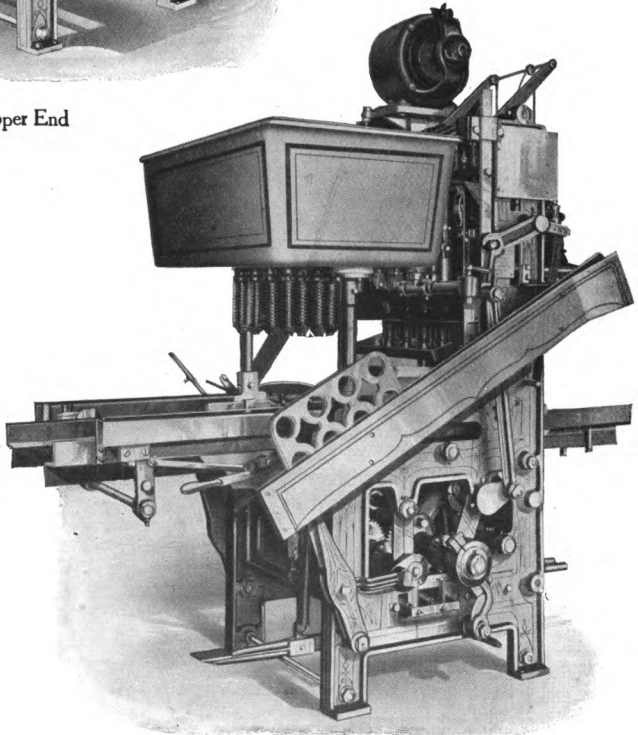
The fitting and erection of sanitary pipe lines with our sanitary pipe and fittings is not a difficult task, and in fact requires less time and labor than to erect a corresponding amount of iron piping. The tools and supplies required are not expensive, nor is any extensive experience necessary to use them properly. The pipe is cut to length with a hack saw, using care to cut pipe square across. The rough edges are then removed with a half-round file. The end of the tube and the recess of the fitting are then cleaned and tinned, after which the fitting and tube are put together and the joint sweated, using a blow-torch for the purpose. Another way is to clean the tube and recess as above, put them together and stand them in vertical position. Make a ring of wire solder and fit it around the tube just above the fitting; then apply the blow-torch flame to the fitting where joint is to be made, and as the solder melts it will run down into the space between tube and fitting and will, if the surfaces have been properly cleaned and prepared, make a perfect joint. It is essential, in order to make a strong and sanitary joint, that the solder fill the space between tube and recess; it will not do to merely solder at each end.

# The Automatic Combined Bottle Filling and Capping Machine

See next page for descriptive  
particulars



View of Capper End



View of Filler End

# The Automatic Filler and Capper

## Description

This is the only power-operated combined filler and capper that has been demonstrated a success. It fills the bottles and puts the caps on them. You feed the cases of empty bottles at one end and take them at the other filled perfectly, capped perfectly and without being touched with the human hands.

Being power-operated, there is a precision and accuracy about it that is not found in hand-operated machines. The mere touch of a lever starts it going and the cases are automatically forwarded.

It fills the case of bottles at one time. In capping, however, it only caps one row at a time. On the quart machine shown there are twelve valves and four capping spindles. This reduces the number of parts, making it easier to care for, less liable to get out of order, and more accessible for adjustment.

It takes longer to fill than to cap a bottle and the machine has ample time to cap three rows while the cases are filling.

In capping, the capping spindles descend, capping the first row of four bottles. The spindles are withdrawn, the case moved forward, bringing the next row under the spindle, when the operation is repeated, and again for the third row.

The cap feeding device is superior. There are no narrow grooves or knife-like slides. The caps are taken from the end of a horizontal tube. This feature of the machine is trouble-proof

In the lower illustration is shown the retainer returning slide and retainers. Where locker cases are used the retainers are not necessary, but where the plain case is used their employment is advisable. The purpose of the retainer is to hold the bottles firm and true, and their use entails no labor or inconvenience to speak of, nor does it interfere in the slightest with the speed of the machine. The case is set in first position and a retainer dropped over the bottles. At the other end the man removing the cases lifts off the retainer and places it in the gravity slide where it goes back to the forward end of the machine.

Electric operation is the ideal, although the machines can of course be belted to a line shaft. The cuts show an electric motor mounted on the frame of the machine.

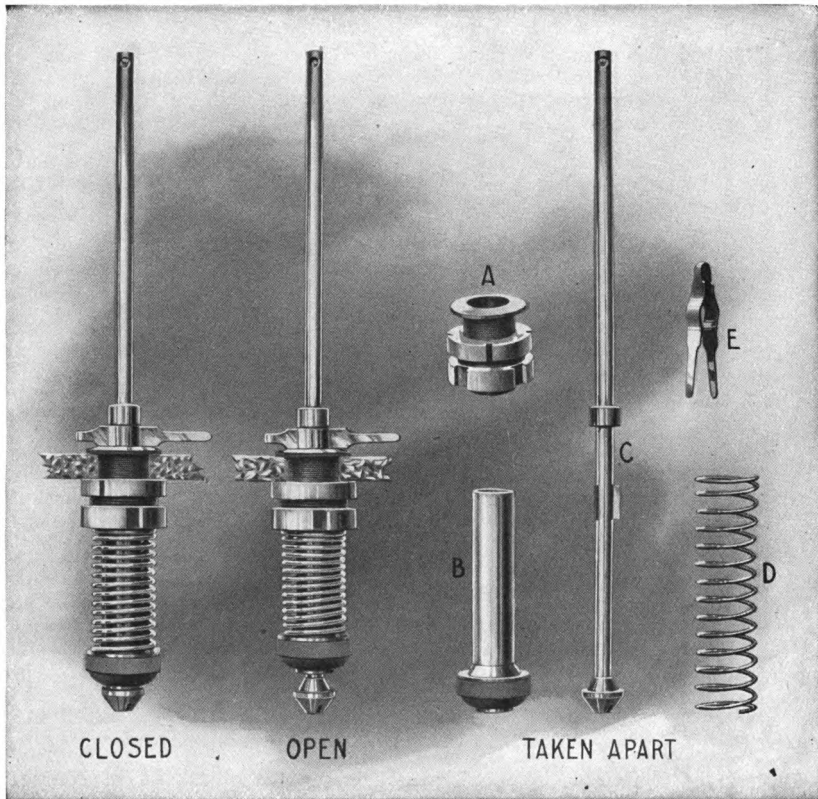
There are a large number of these machines in use by leading milkmen in the United States and Canada and we can refer you to a user near you as to the satisfaction rendered by the machines.

The machine illustrated is for quarts. Pint bottles may be filled by the quart machine by transferring the bottles to specially spaced filling cases. This is often done in smaller plants, but in larger ones it is advisable to use two machines, one for quarts and one for pints.

The construction of the automatic filler and capper is in keeping with the most advanced ideas. It is sanitary in all parts and easily cleaned and sterilized. The milk tank is porcelain-lined and fitted with a tinned copper cover. Drip pans are provided to catch all drip. The frame is galvanized, then painted with aluminum paint, giving it a bright and clean appearance, which is further enhanced by the nickel-plated valves, springs, levers, capping spindles, etc. The gears are machine cut, making them run smoothly with but little wear.

Please note the compactness and small floor space required. Full particulars, dimensions, prices, list of users and any further information desired on request

## Milk Bottle Fillers



The above cut shows our patented flexible milk bottle filling valve. View at extreme left shows the valve closed; to the right of this the valve is shown in the position assumed when the bottle is raised against the rubber closure. The milk flows from the milk tube and is deflected outward and flows down the sides of the bottle, the air displaced passing up the center through the air tube. Every bottle is filled to just the correct height. At the right is a group showing the valve taken apart. A is the sleeve and lock nut which are attached to the tank; B is the milk tube which slips into A; C is the air tube and valve; D is the coil spring which automatically closes the valve as the bottle is withdrawn; E is the key which slips on the air tube and holds the entire valve together. To take valve apart slip key E off air-tube C; the entire valve except A is then drawn out from below. No other valve is so easily taken apart, cleaned and put together ready for use again. The cuts show the No. 1 Valve for ordinary bottles. We also furnish any of our fillers with special valves for special work.

### Bottle Fillers for Condensed Milk

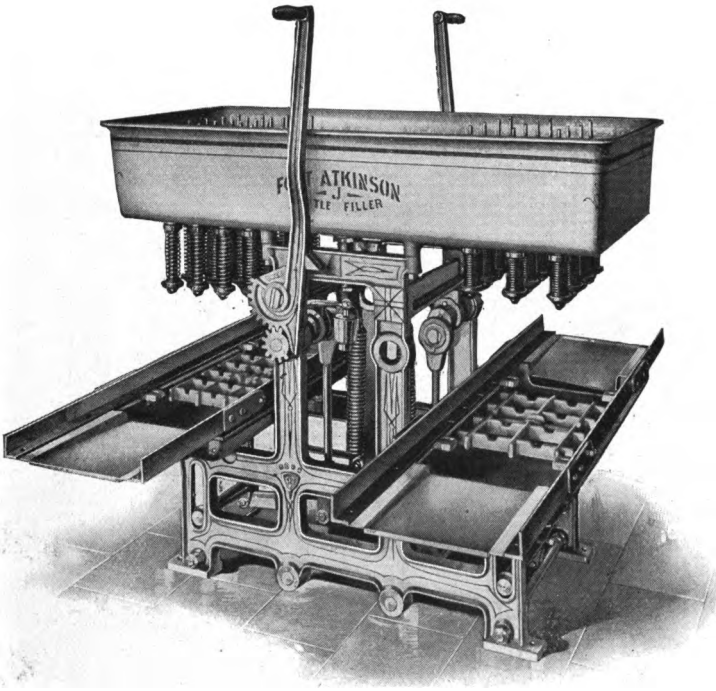
Any filler will on special order be equipped with special valves for filling plain condensed milk in milk bottles with standard cap finish. This product, being heavier bodied, requires special valves.

### Bottle Fillers for Special Finish Bottles

Any filler will on order be equipped to fill bottles with special finish, as for example, bottles with metal caps of various kinds. In ordering fillers for special bottles always send a sample of each size bottle to be used.



## Style "J" Filler



This double end filler has a very large capacity and one machine will take care of as high as thirty thousand bottles per day. It is a rapid machine, filling quarts in 3x4 cases at one end and pints in 4x5 cases at the other. Both ends can be operated simultaneously if desired.

The cases are elevated by a hand lift arranged to give leverage in proportion to the resistance. As the case is brought high enough to bring the bottle mouths against the valves the leverage increases, consequently the operator does not become fatigued.

Several hundred fillers of this style are in operation. Its good points have been proven.

Lever locks automatically in either open or closed position by pulling past the center. Ball bearings on lifting device reduce the friction.

All castings are galvanized; tank, drip pan and case platform heavily coated with porcelain.

Can be used with Style M, Style V, or Defiance steel cases.

Actual capacity quart end, 2,500 to 3,000 per hour.

Actual capacity pint end, 4,000 to 5,000 per hour.

This is undoubtedly the finest constructed filler on the market. The actual capacity is larger than others owing to the speed at which our valves operate.

Dimensions over all: Length of tank, 54 inches; width tracks extended, 60 inches; folded, 36 inches; height, 4 ft.

Shipping weight approximately 1,800 pounds.

Price, including cover for tank.....\$325.00

## Styles "H" and "I" Fillers

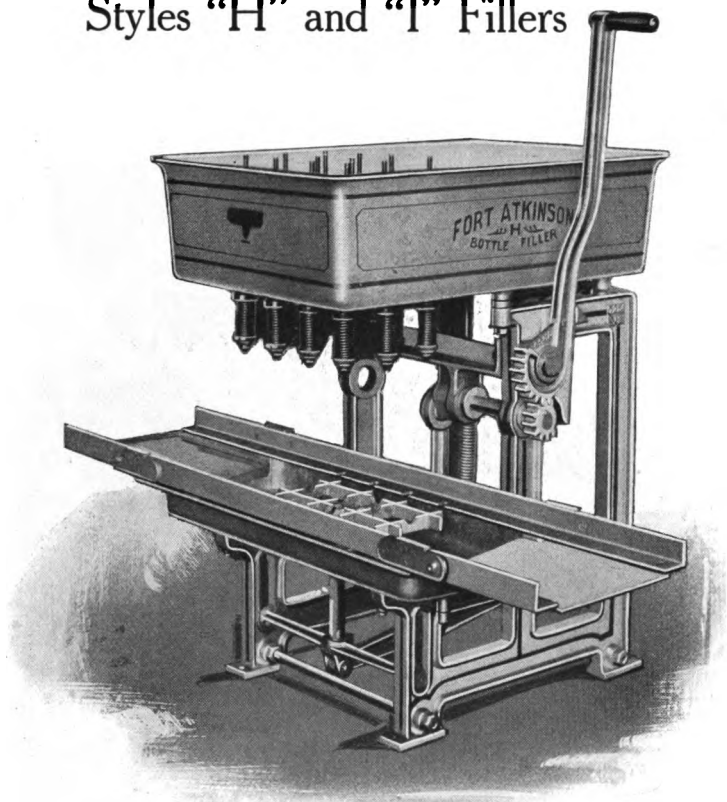


Illustration of Style "H" for 3x4 cases, also made for 4x5 cases.

This is a single end filler for wood cases or galvanized cases of 3x4 quarts or 4x5 pints arrangement. It has galvanized castings, enamel tank, heavy iron drip pans, which are also enameled, and enamel platform. The hand lever lift, running in ball bearings, makes it surprisingly easy to operate. Lever locks positively either up or down, leaving the operator free to do other work, such as getting an empty case ready or taking a filled one away, while the bottles are filling.

This is the highest grade single end filler on the market. It is made for either pints or quarts. In ordering, specify style and make of case used.

Price, for quarts .....\$200.00

Price, for pints ..... 250.00

Shipping weight, 680 lbs.

Regular fillers are furnished without covers, casters or outlet valves. These can be furnished at the following prices extra:

Sanitary outlet valve complete...\$7.50      Cover with cotton filter strainer...\$7.50

Common cover (tinned copper).. 4.00      Casters—set of four ..... 2.00

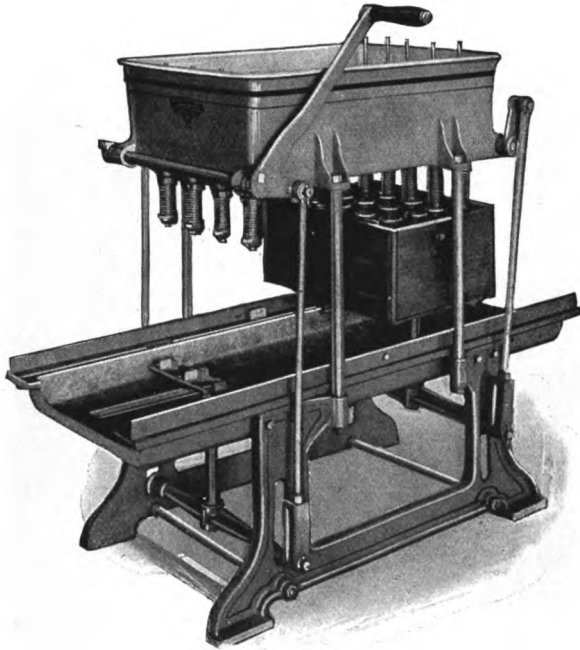
### Style "I" Filler (2x6 cases)

This filler is identical with the style "H" Filler illustrated above, except that it handles 2x6 galvanized iron cases. Valves are spaced for quart bottles.

Price .....\$200.00

Extras same as for Style "H."

## Style "G" Filler



This double end filler meets the needs of the large class of dealers who bottle less than 1,000 bottles per day. It is a high quality machine, smooth working, rapid and sanitary. Being double end, either quarts or pints can be filled in the delivery cases without transferring. Fills 5 pints in 4x5 cases at one end and 4 quarts in 3x4 cases at the other. Both ends can be operated at the same time.

The Style "G" is made apparently stronger than need be, but it assures long life and perfect satisfaction.

All castings are galvanized. Tank lined with white porcelain enamel. Drip pan cast iron, porcelain enameled; case elevators are also enameled. Levers lock positively when case is elevated, leaving hands free to cap bottles already filled, etc.

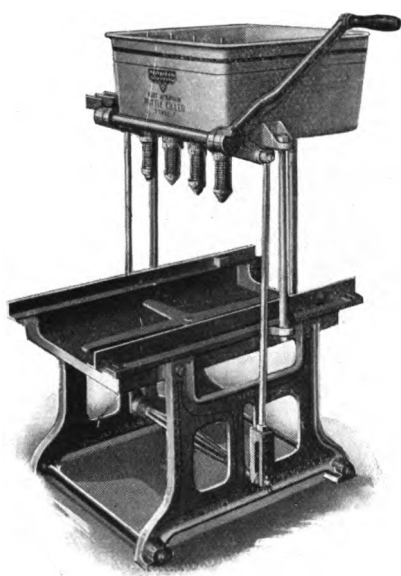
### Price

Complete as illustrated, with four-quart and five-pint valves. Shipping weight, 630 lbs. ....\$100.00

No covers, outlet valves or casters are included in above prices. These parts are furnished, if wanted, at the following prices, extra :

Plain cover, tinned copper.....\$2.50	Outlet valve .....\$7.50
Copper cover, tinned, with cotton filter strainer ..... 5.00	Casters, set of four..... 2.00

## Style "F" Filler



Low price, and high quality are combined in this filler. It is made for either quarts or pints, filling cases 3x4 and 4x5 arrangements respectively. It is fitted with enamel tank, platform and drip pan. All castings are galvanized.

For a small plant filling both quarts and pints, a single quart size with a few extra special space cases for filling pint bottles makes a most satisfactory outfit, giving the advantage of a rapid, strictly sanitary, easily cleaned filler at a very low price.

In operating, the case is first put on the track in position to fill the row of bottles nearest the operator. When this is filled the case is pulled forward one row and the next row of bottles filled. As the lever is arranged to positively lock the case in an elevated position, the operator has his hands free to cap the bottles just filled. In this way the filling and capping is accomplished at a considerable saving of time, besides reducing the danger of dust falling into the bottle and contaminating the milk.

In ordering this filler, specify whether for quarts or pints and give style and make of case used. Can be used with open bottom, wood or steel cases or common tight bottom galvanized steel cases.

### Prices

Style "F" Single End Filler, 4-qt. valves.....	\$60.00
Style "F" Single End Filler, 5-pt. valves.....	65.00

Shipping weight is 420 lbs.

Above prices do not include covers, outlet valves or casters. If these are wanted, they will be furnished as extras at the prices given below.

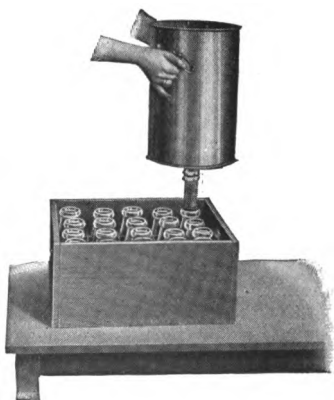
Sanitary outlet valve, complete...\$7.50	Cover with cotton filter strainer..\$3.00
Plain cover, tinned copper..... 1.50	Casters, per set of four..... 2.00

## Single Valve Filler

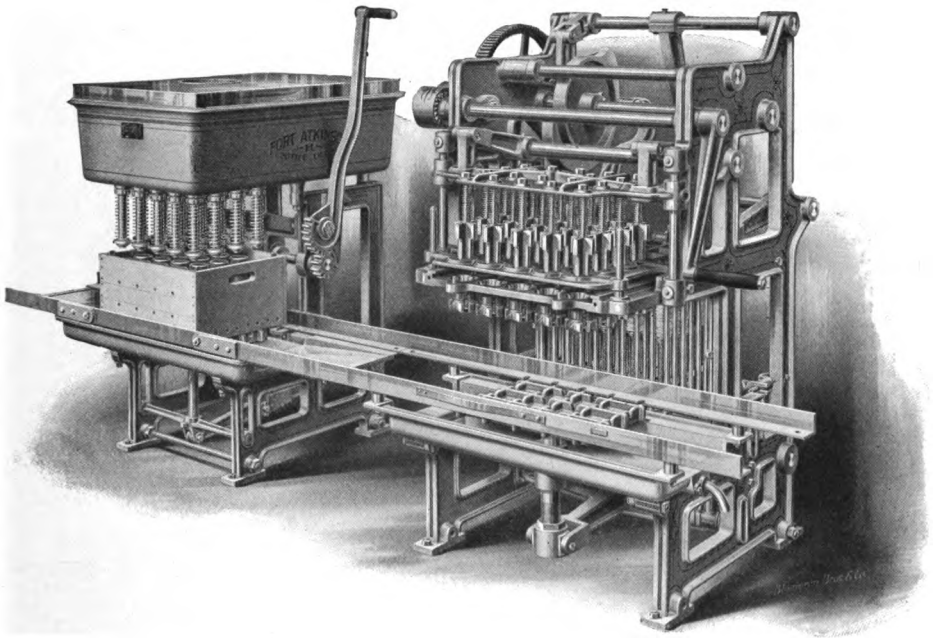
With Enameled or Tinned Copper Can

The cut herewith is of a very simple and practical bottle filler for filling bottles one at a time and suitable for dealers filling 50 to 300 bottles per day. It consists of a cylindrical can having a stiff, heavy bottom to which is attached a standard bottle-filling valve. The operation is easily understood from the cut. Bottles can be filled in delivery cases or when setting on table or bench. Fills all bottles to an even height, no topping or refilling. Valve can be taken apart for cleaning in less than five seconds.

Price, enameled can, no case furnished....	\$12.00
Price, copper can, no case furnished.....	8.00



## The Fort Atkinson Capper



The capper illustrated above caps all the bottles in any standard case at one operation. The cap holders are at the back of the machine and there are as many holders as there are bottles in the case used and the arrangement is the same. Each holder has space for about 300 caps and is easily filled from a tube or by means of the special devices furnished. Above the cap holders is a traveling cap plate which receives the caps from the stacks one at a time from each stack and travels forward underneath the plungers. The case is elevated so that the bells engage the bottle tops and the plungers descend, seating the caps. All operations are performed automatically and the operator simply places the case in position, then turns the crank.

**CONSTRUCTION**—The capper throughout is of the highest grade of construction—heavy, substantial, durable, sanitary and easily accessible for cleaning. There are no delicate, troublesome, knife-like feeders. The bells are removable by making a quarter turn. The plungers are easy to get at for brushing.

**CAPS**—We are prepared to furnish it to cap any size and number of bottles in any standard case. It is adjustable to handle any thickness of cap and will also handle many of the special caps, as, for instance, lip caps and those with special attachments. If you wish to use special caps send samples and we will advise whether machine will handle them.

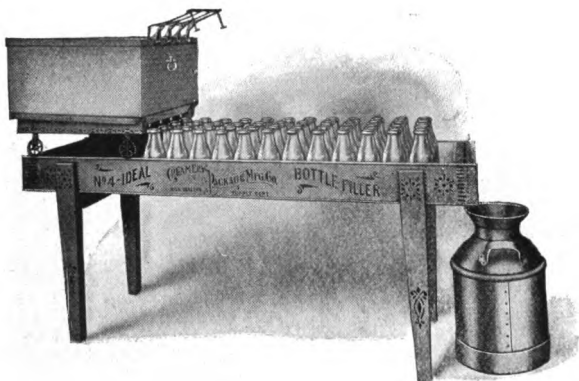
**HAND OR POWER**—Regular machines are made for hand operation, but where wanted we can fit it with pulley and attachment for power drive.

*Write for prices, stating number and size of bottles and make and style of case used.*

## Ideal Bottle Fillers

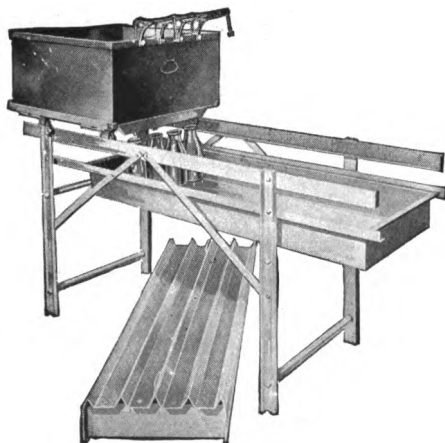
### With Wood Frame

For a low-priced bottle filler, we recommend the Ideal. It is substantially made and provided with a zinc-lined sink with a holding capacity of 24 or 48 quart jars. The tanks hold about 13 and 27 gallons and have the filling device attached. The machine's filling capacity is about 12 and 18 quarts per minute, filling two or four jars at once, but the attachment is so made that one jar can be filled at a time if so desired. It is easily cleaned and very durable.



### Prices

Ideal Jar Filler, complete, each.....	2-Row \$12.00	4-Row \$15.00
Fitted with removable attachments for pints and half-pints, each	13.50	17.00



### All Metal

This consists of the tank, filling valves and fixtures of the regular Ideal Filler mounted upon a well-braced, all-metal frame. Our customers will readily recognize this as an improvement in harmony with the modern demand for strictly sanitary milk room utensils. It contains no wood parts whatever. At the base in the cut is shown the removable attachment for pints, which is furnished extra to order.

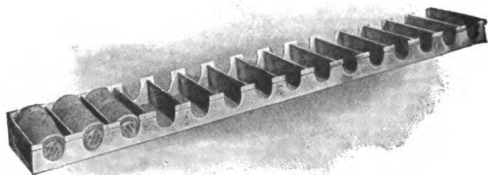
### Prices

Complete for quart jars.....	\$24.00
With removable attachment for pints or half pints.....	26.00
With removable attachment for pints and half pints.....	28.00
For repairs for Ideal Fillers consult Index.	

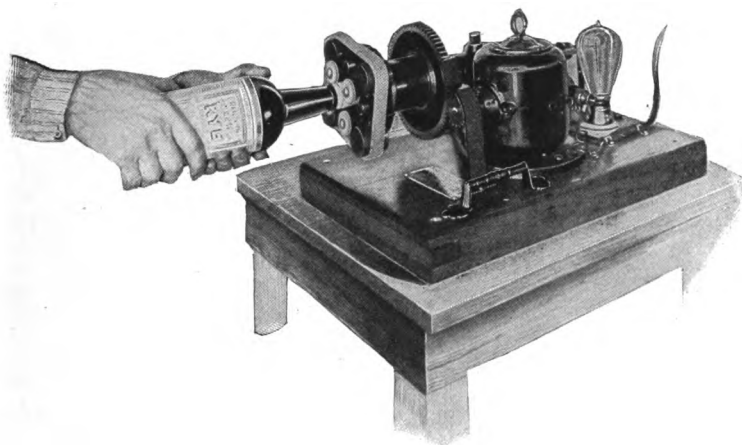
## Cap Trays

These trays are very convenient. The caps may be gotten ready beforehand and placed in the compartments with the printed sides all facing one way. They are small and compact and, as will be seen, hold a good supply of caps. Made in several sizes.

11x3 in., as furnished with Style "F" filler; holds about 400 caps, each.....	\$1.00
11x5 in., as furnished with Style "G" filler; holds about 600 caps, each.....	1.00
26x5 inches, as illustrated; holds about 1,500 caps, each .....	1.50



## Tin Foil Capping Machine



The above illustrates an electric drive machine for capping bottles with tin foil caps. This machine puts the caps on the bottles, making a very neat package and one that cannot be opened and the caps replaced without the fact that it has been tampered with being plainly apparent. Where the milk man wishes to cover the mouth of the bottle in this way it is superior to any other style of tin or paper caps. This machine is in successful use by a number of dealers. Caps can be printed on top with any design wanted.



### Prices

Machine is furnished complete with electric motor and connection, ready to plug into an electric light socket.

For Capper with direct current motor.....\$100.00

For Capper with alternating current motor..... 125.00

Prices are F. O. B. New York City. In ordering, give voltage if direct current. If alternating, give voltage, cycle and phase.

### Tin Foil Caps

Caps for the Electric Bottle Capper can be furnished plain or printed. Consult Index for Tin Foil Caps.

# C. P. Milk Cans

## General Description

Creamery package cans are good cans. You may select the can that will best appear to serve your purpose with absolute assurance that it is the best value to be had at the figure.

**Raw Material**—Nothing short of the best to be had is good enough for C. P. Cans. The stock is the best cold-rolled open-hearth velvet finish sheet steel. It takes good steel to stand the heavy draws necessary to transform a flat circle of heavy gauge into a perfect milk can breast. Our drawn parts are all drawn to finished form without spinning.

All stamped parts are re-annealed; heated almost to the fluid point which restores the elasticity and toughness of the material.

**Tinning and Soldering**—Every piece that goes into the can is double tinned with pure block tin after stamping, and in many cases after two or more parts are joined together. Soldering gets special attention. Joints are loaded. Every can is tested for leaks. Our cans are as nearly perfect as cans can be made.

**Sanitary Cans**—A C. P. Milk Can may be easily cleaned by practical methods; there are no crevices, pockets or unfilled joints in which milk can lodge and escape attention. We use high grade material; the dies used for stamping are accurate; spinning is unnecessary, the parts when formed go together and fit; joints are loaded. They are sanitary.

**Some Special Features**—Our method of attaching neck and breast together has been found most satisfactory. Our cans never pull apart here. Parts are joined together with a powerful press and a perfect joint, water-tight even before tinning, is secured. We illustrate the double neck joint in an accompanying cut which also shows how a perfect lock is obtained, and at the same time the inside is flush for easy cleaning. The single neck cans are equally sanitary and strong.

**The Breast Protection** is perfect. Breast hoops are welded, then stretched to size, then pressed into place on the breast. The next operation is to bevel the edges of the hoop with a powerful machine, making a water-tight connection. When tinned, the breast and hoop are virtually a single piece. Moisture or dirt cannot get underneath; the hoop cannot come off. Section at left of cut shows our method; that at right the usual way.

**The Double Neck**, as applied to our Duro cans, both New York and Western styles, means just what the name implies. Two sheets of steel, each of standard gauge, fit closely one within the other and extend from the breast, where they are securely locked to the top wire, both being turned around the wire. The neck is double and doubly strong.

**Covers**—On our highest grade cans, both New York and Western, we furnish one-piece, double rim covers. No sharp edges on new covers, nor will there be rough edges when the covers are old. The rims are double thickness. Cuts of Paragon and Umbrella covers show this feature. Our other covers are best of their types.

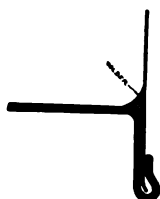


THIS IS  
THE PERFECT  
JOINT

Showing connection of  
breast and double neck.



Our Double Neck



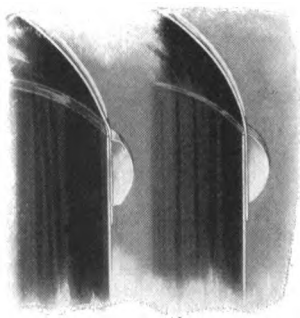
Guardian Bottom



Defender Bottom



Vindicator Bottom



Breast Protection of C. P.  
Cans and Common Cans.



# C. P. Milk Cans

## Covers



**Paragon.**  
Patented One-piece, double rim cover; finest western style cover made.



**Sanitary.**  
Deep Stamped. One-piece cover.



**Patriot.**  
Old style cover with heavy rim soldered to bowl.



**Umbrella.**  
Patented one-piece cover for New York cans. No raw edges.

## Handles

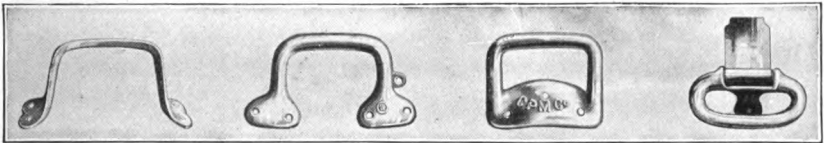


**20th Century.**  
Round and easy gripping.

**Benefactor.**  
Tea kettle style.

**Liberty.**  
Tea kettle style. Reinforced.

**Renown.**  
Plain stamped.



**Utility.**  
Malleable iron

**Faultless.**  
Malleable round grip.

**Zenith.**  
Malleable round grip, flat bar.

**Drop.**  
Used on New York cans.

## Bottom Hoops and Bottoms



**Chancellor.**  
Stamped Bottom. Used with Rival, Vindicator and Defender Hoops.



**Guardian.**  
The heavy bottom that requires no bottom hoop.



**Rival.**  
Welded Hoop. Plain.



**Vindicator.**  
Welded Hoop. Inside Flange



**Defender.**  
Welded Hoop. Outside Flange.

## C. P. Milk Cans



### Elgin Pattern

Our new Elgin pattern has the hoopless, heavy gauge Guardian bottom construction, also the patented one-piece double rim Paragon cover.

Code word:	Commander Conqueror Chieftan		
Size, gallons .....	5	8	10
Average weight, lbs.	12	20	21
List price .....	\$2.90	\$3.60	\$3.80

### Elgin Special

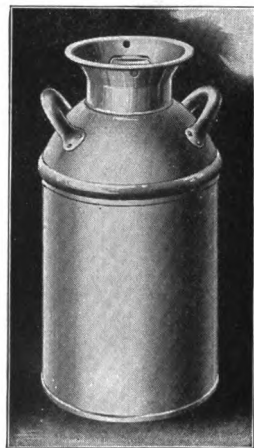
Same construction as the Elgin, but made of heavier stock as indicated by the weight.

Code word:	Messenger Courier		
Size, gallons .....	8	10	
Average weight, lbs. ....	23	25	
List price .....	\$3.80	\$4.10	

### Elgin Old Style

This is the original Elgin, having a heavy bottom hoop underneath the bottom with a protecting flange to prevent injury to the body sheet. Bottom hoop is welded, not riveted. Otherwise same as Elgin pattern above.

Code word:	Arbiter	Advocate	Regal
Size, gallons .....	5	8	10
Average weight, lbs.	12	20	21
List price .....	\$2.90	\$3.45	\$3.65



### Iowa Pattern

Code word:	Cavalier	Cardinal	Gallant
Size, gallons .....	5	8	10
Average weight, lbs.	12	18	20
List price .....	\$2.80	\$3.25	\$3.40

### Climax Iowa

Code word:	Vallant	Majestic	Supremacy
Size, gallons .....	5	8	10
Average weight, lbs.	10½	15	16½
List price .....	\$2.60	\$2.90	\$3.15

Ask for Special Can Catalog



## C. P. Milk Cans

### 7-inch Neck Elgin

The seven-inch neck is preferred by some on account of being easier to clean. Aside from the size of the neck this can is identical with the regular Elgin.

Code word:	Eminent Celebrity	
Size, gallons .....	8	10
Average weight, lbs. ....	20	21
List price .....	\$3.90	\$4.10

### Duro and Duro Special

Duro and Duro Special Cans are made with double necks and are intended for the hardest kind of service. They are of the same specifications throughout, differing only in the weight of material.

Code word:	Duro		
Size, gallons .....	Envoy	Diplomat	Ambassador
Average weight, lbs. ....	5	8	10
List price .....	\$3.45	\$3.65	\$3.90

Code word:	Duro Special		
Size, gallons .....		Dauntless	Diligent
Average weight, lbs. ....		8	10
List price .....		\$3.90	\$4.20



### New York Patterns

#### New York "Duro" Cans.

Code word:	Paramount
Size, gallons .....	10
Average weight, lbs. ....	28½
List price .....	\$4.40

#### New York "A" Cans.

Code word:	Alert	Defiance
Size, gallons .....	8	10
Average weight, lbs. ....	21½	23
List price .....	\$3.90	\$4.10

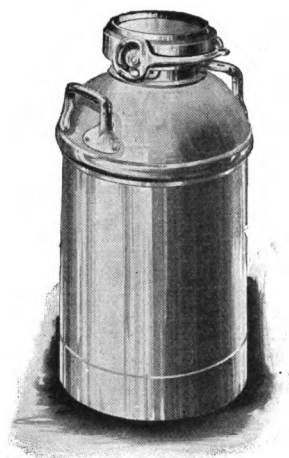
#### New York "B" Cans

Code word:	Mascot	Spectator
Size, gallons .....	8	10
Average weight, lbs. ....	20	22
List price .....	\$3.55	\$3.70



Ask for Special Can Catalog

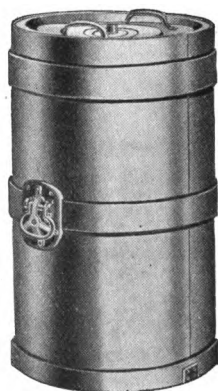
## Lock Top Can



Cover can be locked with padlock or sealed. Cannot leak, even if can is overturned. Rubber ring, similar to bowl ring on separator, is clamped between cover and neck. Many attempts to make lock cover cans have been made, but until now all are complicated. This is simple, secure and sanitary. Diameter, 6 inches. Can be furnished in any weight of can. Extra weight of lock top about one pound. Prices on application.

## Factory Milk Cans Union

The Union can is the strongest and lightest on the market; has the latest improved bottom, which consists of a disc stamped from heavy wrought iron plate, and a hoop, both thoroughly tinned and put together in such shape as to virtually form one solid piece. Only one seam lengthwise of the can; inside smooth and easily cleaned. Cover fits perfectly, avoiding all slopping.

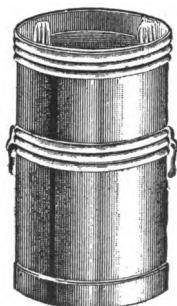


The Union

### Sizes and Prices

15 gallon	.....	\$ 6.25
20 "	.....	7.00
30 "	.....	8.00
40 "	.....	10.00
50 "	.....	11.25

Write for Discounts.



Hodo

## Hodo

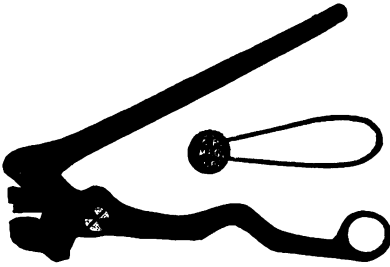
This is an exceedingly cheap, strong and durable can for hauling milk to the factory.

It will be found quite as serviceable as cans costing one-third more money.

### Sizes and Prices

15 gallon	.....	\$3.40
20 "	.....	3.85
30 "	.....	4.75

# Milk Can Sealing Press



It has a steel die, and we will insert not to exceed four letters on each side without additional charge. The press is neatly japanned and fully guaranteed.

Price, each.....\$1.50

## Milk Can Seals

Acme, single wire, 1000 in box,  
weight 5½ lbs.....Per M.....  
Ideal, double wire, 1000 in box.....  
weight 7½ lbs.....Per M.....

## Brass Plates



A compact way of lettering or numbering the cans is by the use of special brass plates made with rounded corners, having one-quarter or one-half inch letters. These plates are 3½ inches long by 1 inch wide, and when soldered on cans look very attractive.

### Prices

Per 6  
\$1.00

Per 12  
\$1.50

Per 25  
\$2.00

Per 50  
\$3.00

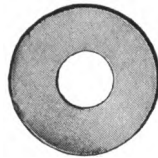
Per 75  
\$4.00

Per 100  
\$5.00



## Tinned Milk Can Links

For attaching covers to can to prevent loss.  
Plain single links  
with rivets, doz..\$0.30



## Tinned Milk Can Washers

For strengthening cover and bowl where link is used. Tinned on both sides. Can be easily soldered to cover and bowl.  
Per gross.....\$0.70



## Letters and Figures

For marking cans.  
Furnished tinned on one side, ready to be soldered to can.  
Brass, 1¼ in., per  
100 .....\$1.20

## Can Jackets

### For Shipping Cans.

Made from ¾-inch hair felt; lined and covered with heavy canvas; the buckles and straps are of the strongest quality. Jacket is durable and efficient.

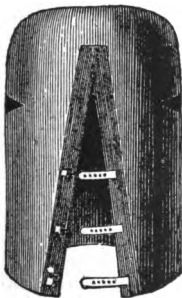
### Sizes and Prices

For the New York, Elgin and Iowa Cans:  
20-qt. size, each.....\$ 2.75  
Per dozen.....31.00  
32-qt. size, each.....3.00  
Per dozen.....34.00  
40-qt. size, each, same price as 32-qt.

Prices on Jackets made from 1-inch and ½-inch Felt given on application.

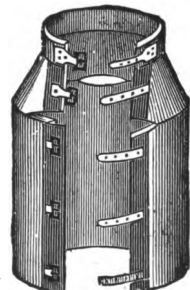
### For Service or Faucet Cans.

Has separate cover for can lid, which is removable with lid, otherwise same as for shipping cans. Will fit any style faucet can



Shipping  
Can Jacket.

20-qt. 32-qt. 40-qt.  
Each .....\$3.25 \$3.50 \$3.50



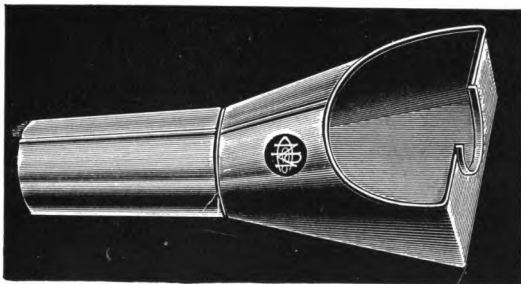
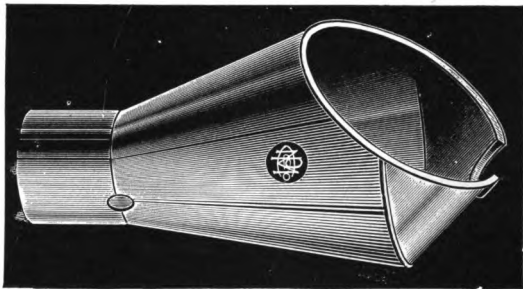
Service  
Can Jacket.

## Conductor Heads

Our Conductor Heads are made extra strong, and connected with a short piece of pipe suitable for short delivery. When more lengths are required, they are arranged so as to telescope together, and are thus easier to handle.

### Heavy

For large factories, made from the best XXXX tin.  
Price, each .....\$1.80



### Light

For small factories.  
Price, each .....\$1.35

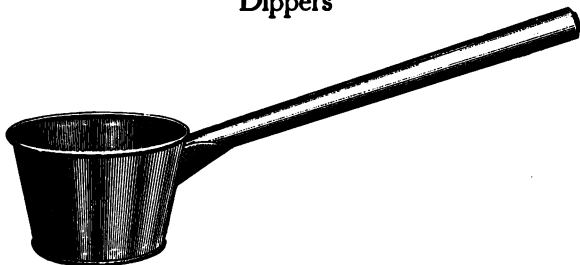
## Conductor Trough



Price, 2x Tin, 4-in., per foot.....\$0.30  
Price, 4x Tin, 6-in., per foot......40

Double the lists to obtain price on above goods furnished in Tinned Copper.

## Dippers



One-gallon size, short handle.....each \$0.50  
One-gallon size, long handle..... " .60  
Strainer Dipper, short handle..... " .75

## Milkman's Faucet Cans

A faucet can constitutes one of the main articles needed, where customers answer a bell call and the milk is served to them from a measure. It is also used by dealers in bottling milk on a small scale.

With the help of three feet of pure gum rubber hose attached to the nozzle of the faucet, one can fill the bottles to good advantage.

We can furnish two styles of faucet cans fitted with either brass or nickel-plated, new or old style faucets.



### New Style Umbrella Covered

#### Size of Neck Inside 7 Inches

The neck of the can is considerably larger than that of the old style, and is fitted with an umbrella cover, which prevents any dust or foreign matter from getting into the can. Having the neck larger it is more easily filled. The faucet is sanitary. The shank (being well braced) is fitted into the can and threaded on the inside so that the faucet may be detached from the can easily and quickly. It then can be taken apart into four pieces, and easily cleaned in all parts. The mouth of the faucet is fitted with a special nipple to which a hose can be easily attached. Size of outlet of faucets, 1 inch.

#### Prices

	5 gal.	8 gal.	10 gal.	12 gal.	15 gal.
With new style brass faucet.....each,	\$5.30	\$5.50	\$6.00	\$7.00	\$8.00
“ “ “ nickeled “ .....	5.80	6.00	6.50	7.50	8.50
“ old “ brass “ .....	4.50	4.70	5.20	6.20	7.20
“ “ “ nickeled “ .....	5.00	5.20	5.70	6.70	7.70

Extra Ideal Detachable Faucets, complete, with Collars.

Brass.....each, \$2.50    Nickeled.....each, \$2.75

### Old Style

#### Size of Neck Inside, 6 Inches

This can is fitted with the regular funnel shaped cover and common sized neck. The faucet is not detachable to the extent that it can be cleaned as easily as the "Ideal" Detachable faucet. However, for a low-priced outfit this can will answer nicely.

We can furnish either style can with either style faucet, but we recommend the combinations referred to in the above descriptions.



#### Prices

	5 gal.	8 gal.	10 gal.	12 gal.	15 gal.
With new style brass faucet.....each,	\$4.40	\$4.50	\$5.00	\$6.00	\$7.00
“ “ “ nickeled “ .....	4.80	5.00	5.50	6.50	7.50
“ old “ brass “ .....	4.20	4.25	4.70	5.70	6.70
“ “ “ nickeled “ .....	4.50	4.70	5.20	6.20	7.20

### Pure Gum Hose

To be used in connection with faucet cans for filling milk jars. 1-inch inside measure.

#### Price

Per foot.....\$0.25

# Milk Dealer's Tinware

## Pouring Cans

These cans are made of **extra heavy XXXXXXX tin**, being well bound with a heavy iron hoop at the bottom covered with a brass one. The end of the spout is also protected by a brass band. All seams are well soldered inside and out so that the cans are perfectly smooth, leaving no crevices for milk to get in and sour. The bottoms are raised and japanned, making them rust-proof. The balls are made of heavy copper wire. A detachable strainer of extra heavy wire strainer cloth is used on inside of can, being held in place over the outlet by means of small clips. The can is, therefore, very easily cleaned.

### Sizes and List Prices

1½ gallon.....	each,	\$3.35
2 gallon.....	each,	3.75
2½ gallon.....	each,	4.20
3 gallon.....	each,	4.60



## Cream Cans With Chained Cover

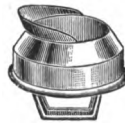


These cans are designed to be used for cream that is sold in large quantities to restaurants, stores and small dealers. They are well made, of heavy block tin, and all seams are soldered perfectly smooth inside and out. The six-quart sizes and smaller have wire-protected japanned bottoms. The eight-quart sizes and larger have heavy tinned hoop and raised japanned bottom. The cover is chained with tinned linked chain, preventing the covers from being lost through carelessness. The handle is attached to the side, because it has been found more convenient for handling than where the old style ball is used.

### Sizes and List Prices

Size .....	2 quart	3 quart	1 gallon	1½ gallon
Price .....	\$0.75	\$0.85	\$0.90	\$1.15
Size .....	2 gallon	2½ gallon	3 gallon	4 gallon
Price .....	\$1.35	\$1.50	\$1.75	\$2.10

## Cream Cans With Cover Measure



This style of can is very convenient for the deliverer. The cover is made to be used as a half pint graduated measure, thus doing away with extra measures. It may also be used to advantage for the same purpose as the chained cover cans.

### Sizes and List Prices

Sizes .....	2 quart	3 quart	1 gallon
Price .....	\$0.85	\$1.10	\$1.25

Prices on this page subject to discount.





# Milk Dealers' Tinware

## Buttermilk Cans

Summer trade calls for a special style of can to supply the demand for buttermilk. They have chained covers and well fastened spouts, and are made in two styles—light for barroom and restaurant trade, and heavy for wagon use. All sizes have wire protected and japped bottoms and smooth seams.



### Sizes and List Prices

#### Light

2-quart .....	each, \$0.65
3-quart .....	each, .75
1-gallon .....	each, .85

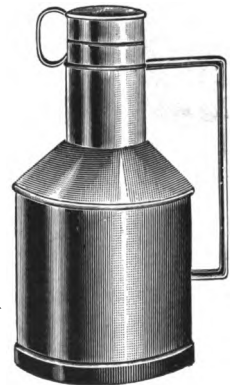
#### Heavy

1-gallon .....	each, \$1.00
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Other sizes made to order in dozen lots.

## "Diamond" Serving Cans

This can embodies several features that are entirely different from any found in other style cans used for this purpose. The body of the can is similar to our Cream Cans. The neck is just large enough to receive regular size graduated measure, fitted with the handle at the bottom and with straight lip. When in position this measure serves as a perfect cover. Handy and ready for use, as well as perfectly clean, because it is not made foul by dirt blowing into it, as is the case with the old style measure. The handle is so attached that milk can be poured out easily, no matter whether the can is full or nearly empty. Price complete with one measure.



### List Prices

Size .....	1½-gallon.	2-gallon.	2½-gallon.	3-gallon
Each .....	\$1.65	\$2.10	\$2.50	\$2.90
Extra measures to fit, 1-quart size, each.....	\$0.40			

## Milk Kettles

They are fitted with balls instead of side handles and are made of good grade of tin. The covers are not chained. Where not subjected to hard usage this can be used to advantage for carrying buttermilk, skimmed milk, or even cream and whole milk.

### List Prices

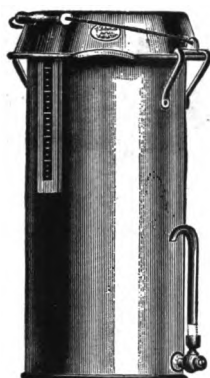
Size .....	1-qt.	2-qt.	3-qt.	4-qt.	6-qt.	8-qt.
Each .....	\$0.25	\$0.30	\$0.40	\$0.50	\$0.65	\$0.75

Prices on this page subject to discount.

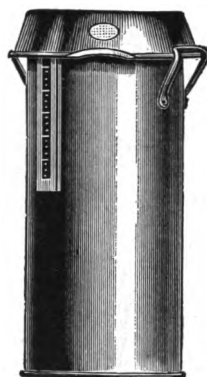


## Deep Setting Cans

### Cooley Style



Cooley Can With  
Faucet



Plain Cooley Can

The submerged system of setting milk for raising cream is everywhere recognized as superior, producing the largest quantity and best quality of cream of any gravity creaming process. The cover extends down over the sides of the can, forming an air lock when submerged, which prevents water getting into the milk. The cans are submerged in cold water immediately after milking and all the cream is thrown up in twelve hours or in time for the next milking. Each can is provided with a glass gauge on the side, which shows at a glance the depth of cream. Where the complete system is used the cans are also fitted with a faucet and siphon at the bottom. This siphon is set so that the skim milk will be drawn off from underneath the cream, but will

stop before any cream runs out. All our Cooley Cans are made of very best tin obtainable. Capacity 18 quarts.

Cooley Can, with gauge, faucet and cover.....	\$3.00
Plain Cooley Can, with gauge and cover, no faucet.....	2.25

### Common Sense Setting Cans

Made of heavy tin plate, smoothly soldered and first class in every respect. Capacity, 18 quarts.



	Each
Without glass gauge or cover.....	\$0.90
With gauge and no cover.....	1.05
With cover and no gauge.....	1.05
With glass gauge and cover.....	1.20

### Loaded Bottom Depot Cans

We furnish, on order, special 10-quart cream cans, shot-gun style, and 20-quart milk cans, railroad style, with bottoms loaded so that when set in water, and milk or cream dipped therefrom, they will not tip over when the can is nearly empty. The inside can runs down to a point, so that all of the milk can be dipped out by the use of our special conical dipper. Cans are made of heavy material and will last indefinitely.

#### Prices

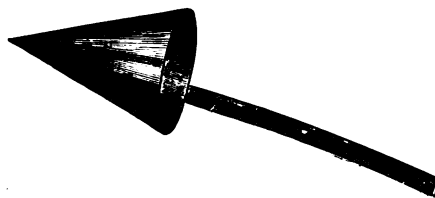
Cream Can.....	each, \$3.75
Milk Can.....	each, 4.25
Special 1-quart Conical Dipper.....	each, .45

### Conical Skimmer

For Deep Setting Cans.

Made of heavy tin. Handle well wired and wire turned to form a convenient hook for the hand. Point of skimmer is filled with solder so it can be easily cleaned.

Each .....\$0.30



Prices on this page subject to discount.

## Graduated Dippers and Measures

### Graduated Dippers With Long Handles



Made of extra heavy tin, being accurately graduated into four equal parts. The bottoms are elevated and are protected with a heavy wire ring, so that the continual wear at this point will not injure the bowl of the dipper. The handles are made of strong wire braced with tin and are turned over on the end to form a hook. The handles are attached to the dippers in a straight position, with a slight curve near the bowl, making them very convenient to use. For use in small cans we furnish the smaller sizes of dippers up to one-pint size, with shorter handles, at the same price as the long-handled dippers. Customers desiring short-handled dippers should so specify in their order.

### Sizes and Prices—Plain Dippers

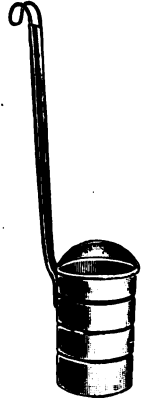
	¼ pt.	½ pt.	1 pt.	1 qt.	2 qt.
Each.....	\$0.25	\$0.35	\$0.40	\$0.50	\$0.75

### Dippers With Lip

This is very convenient, as it prevents all dripping, especially when pouring into small vessels. It is in all other ways identical with the plain dipper. Made in quart size only.

### Price

Each .....	\$0.60
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### Conical Cream Skimmers

These skimmers are graduated the same as dippers, thoroughly well made and have a soldered bead on the inside of the bottom to make cleaning easy. Where dealers wish to skim the cream from the shipping cans in order to get "whipping" cream, or for especial emergencies, these skimmers are very convenient.

### Sizes and Prices

	1 pt.	1 qt.
Each .....	\$0.40	\$0.50

### Graduated Measures

Measures above all other milk receptacles must be accurate. Our measures are guaranteed accurate, are well made of heavy tin and give excellent satisfaction.

### Sizes and Prices

	½ pt.	1 pt.	1 qt.	2 qt.	1 gal.
Each .....	\$0.35	\$0.40	\$0.50	\$0.75	\$1.10

The One-Gallon Measure is not graduated.

Prices on this page subject to discount.



# Factory Strainers

## Buttermilk



### Elbow

For Disbrow and Victor Combined Churns

Price, each .....\$1.00

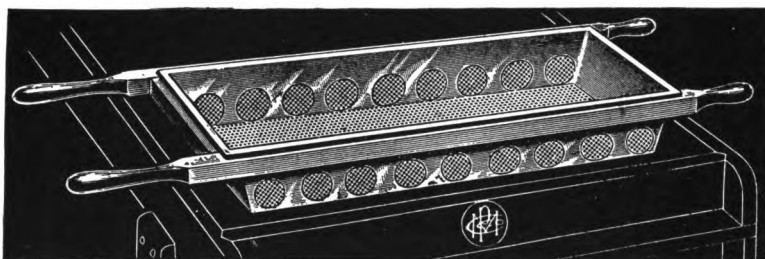
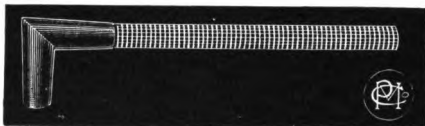
In ordering strainers for Victor Churns give diameter of opening, whether 1½ in., 1½ in. or 2 in.

### Vat

### McLaren's

Made to fit the drain of all factory churns. The neatest and best.

Price, each .....\$1.00



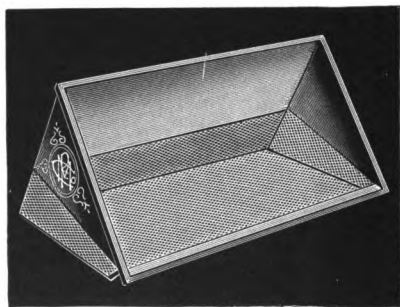
This strainer is used for straining cream or milk into the receiving vat at the factory, and is an article that every creamery man should have. It is made of heavy tin with a perforated bottom. The frame is made of hardwood, and so constructed that it allows the strainer to set into the vat only about two inches, giving it this advantage that the vat can be filled full. It is made light and durable, and is easy to handle and clean, and will fit any sized vat. Price .....\$4.00

### Square

For Combined Churns

Price .....each, \$2.50

In ordering this strainer state style of churn and also length and width of opening.



### Half Round

For Combined Churns

This strainer is so constructed as to hang inside of the churn, supported by two hooks which engage the lower part of the door frame, and is supported by two wire bails resting against the upper part of the frame. When in place and the churn in proper position it hangs perfectly level.

When ordering give length and width of opening and style of churn. Price .....each, \$2.00

## Sieves



### Horse Hair

#### For Straining Buttermilk

6 in. in diameter.....	\$0.40
8 " " " .....	.50
10 " " " .....	.60
12 " " " .....	.75
13 " " " .....	.85

### Brass Wire

#### For Sifting Salt

12-in. brass wire, 20-mesh, each.....\$0.60

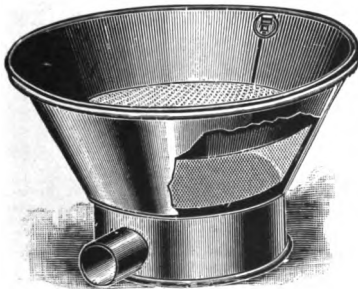
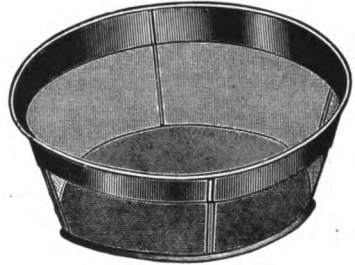
## Strainers

### Handy Churn

This style of strainer is preferred by many, as both sides and bottom are made of perforated tin, allowing the cream to pass through more readily. In ordering state whether Round or Oblong style is wanted.

#### Sizes and Prices

No. 1, 12 inch.....	\$1.50
No. 2, 14 " .....	1.75
No. 3, 16 " .....	2.00
No. 4, 18 " .....	2.50



### Vermont Buttermilk

This strainer is very convenient in creameries for straining the buttermilk as it runs from the churns to the drain. The inner pan is made of perforated tin on the bottom and half way up the sides. It is placed on the floor under the churn outlet; is connected with pipe to the drain. The strainer catches any particles of butter that run out. The strainer is lifted out and the butter turned back into the churn.

Price .....	\$2.00
Pipe for extension, per foot.....	.25

### Roe's Combined Cream and Buttermilk Strainer

This strainer consists of two parts which may be used separately or together. For straining the cream into the churn, the upper half only is used. For straining the buttermilk, use the two parts together, and by means of a pipe attached to the spout conduct the buttermilk to the drain.

Price, complete.....\$2.00

Double the lists to obtain price on above goods furnished in Tinned Copper.



## Dairy Strainers

### Beverly Double Strainer

The milk passes through a double system of screens of different meshes. The strainer is provided with a detachable cup into which all impurities which may pass the upper or coarser strainer are deposited, the floating particles never passing the first strainer. The milk is flushed over and through the lower or finer strainer, pure and clean. At no time does milk "wash over" any previously deposited sediment. By removing the upper and lower cups the strainer is easily cleaned. Made of heavy XXXX tin.

By using our specially prepared Sponge in the sieve receptacle of the Beverly Strainer you have a most perfect filter. Straining milk with a sponge extracts nearly every impurity.

When not in use, keep the sponge in brine water. This will keep it soft as well as sweet. Will fit any size Beverly Strainer.

No. 3, with 12-inch bowl, weight 2 lbs.....\$1.50  
No. 4, with 14-inch bowl, weight 2¼ lbs..... 2.00  
Sponge for sieve receptacle..... .25



### More's Pyramidal Strainer

The brass straining cloth is of very fine mesh; being of pyramidal form it cannot clog. Any coarse impurities fall to the bottom of the bowl, leaving the strainer clean. No cheesecloth is required. Cut shows strainer with rest or supporting spider for straining into deep setting or shipping cans. It is also furnished, when ordered, with a funnel made to slip over bottom of strainer and having a bottom opening 2½ inches in diameter for filling smaller vessels.

The bowl is made of two pieces of spun steel, heavily tinned and neatly soldered together. Weight, complete, 2 lbs.

Strainer with rest.....\$1.50  
Strainer with funnel..... 1.50  
Strainer with rest and funnel..... 1.65



### Chapman Changeable Strainer

Milk passes through two removable metal strainers of different meshes held in place by a wire spring. Can be removed for cleaning in an instant. It has also an extra holder for cheese cloth. Weight, complete, 2 lbs. Bowl 12 inches in diameter.

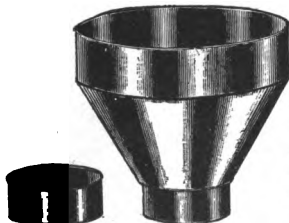
Price, each.....\$1.25



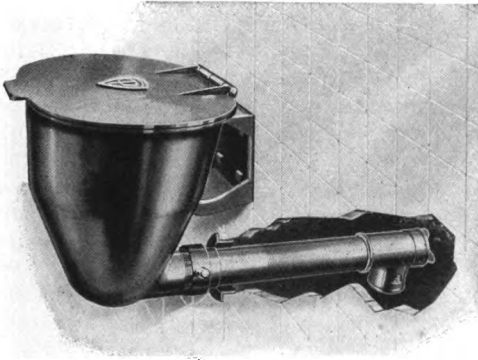
### Common Milk Can Strainer

Made of very heavy tin. Has a wire cloth strainer in bottom of bowl and a separate collar is furnished for attaching flannel or cheese cloth strainer over bottom opening. It will fit a railroad shipping can, Cooley or Common Sense Setter. Bowl is 11 inches diameter. This strainer weighs 2¾ lbs. Do not confuse with cheap strainers made of light tin and weighing only about half as much.

Price, each.....\$1.00



## Milk Filter and Conductor For Certified Dairies



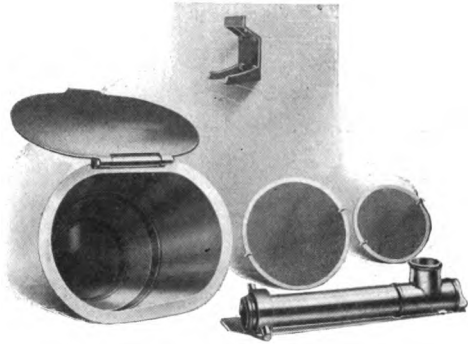
Filter in Position for Use.

through two wire cloth strainers, the first of medium mesh and the second very fine. The bottom of filter is connected to sanitary tubing, which extends through an opening in the partition and delivers into the receiving vat inside the aseptic room.

Filter is made entirely of brass, burnished smooth and heavily nickel plated inside and out. Strainers fit in ground joints. Everything is easily cleaned and sterilized. Sanitary tubing is not included in price of filter. Prices on application.

This valuable appliance for the certified dairy accomplishes two very important things. First—It provides means for conveying milk into the aseptic cooling and bottling room, without opening doors which would permit dust, odors, dirt and flies to gain access. Second—It provides a strainer which removes any coarse foreign matter that may be in the milk and is much better than layers of cheesecloth and cotton.

The filter proper is hung on a bracket provided, which is attached to the wall. Milk is poured into the funnel (which is closed with the hinged cover when not in use) and passes



Filter Taken Apart for Cleaning.



### Receiving or Collecting Vat

This is a special vat or pan for receiving the milk in certified dairies. The milk is poured through the filter described above and conducted to a vat of this description, which is located inside the aseptic room. We make this vat with one or more outlets to feed bottle fillers, separators, etc. It is made of tinned copper riveted at seams; all seams and rivets nicely flushed. Angle iron around top. Bottom slopes to outlet so vat will drain dry. Stand is made of galvanized angle and band steel securely riveted. Legs may be of any length to raise tank to desired height. Vat is made in any size and dimensions wanted, and to order only. Prices will be quoted upon receipt of specifications.

## Dairy Milking Pails

### The C. P. Sanitaire



This type of pail is highly endorsed by authorities on dairy sanitation. By its use the bacteria count is reduced to the minimum and the keeping quality enhanced. This is a very convenient pail to use and milkers take to it readily for the reason that it is as handy to milk in as an ordinary open top pail when held between the knees at the customary angle. There are no loose parts, attachments or strainers to wash and care for. The pail depends for its efficiency on the fact that bacteria are seldom in the milk in the udder, but always gain access to it by falling into it on dust particles floating in the air. The top of the C. P. Pail being covered, dust cannot fall into the milk.

Milkmen, creamerymen and cheese factory men should encourage the use of this pail among their patrons, as it means better raw material. The simplicity of the pail makes it easy to get dairymen to use it. We make special prices on quantities.

Pails are made of heavy gauge steel, are double tinned with pure tin. No side seam. Heavy wire at top and around hood.

Price, each .....\$1.50

### The Ideal



A pail that is made of very strong XXXX tin, the top and bottom being heavily bound with wire. The bottom is made of No. 22 galvanized iron. This makes it doubly strong and durable. Can also be furnished with tin bottoms if desired.

#### Prices

10 qt., \$0.65

12 qt., \$0.70

14 qt. size, \$0.80 each

### Retinned "Seamless"

All those wishing to have utensils that are sanitary and are easily cleaned should be provided with our Retinned "Seamless" flaring pail, fitted with a perfect seamless foot. Taking these points into consideration, this pail is superior to any other style on the market, being exceedingly rigid and durable.



#### Prices

6 qt., \$0.60; 8 qt., \$0.70; 10 qt., \$0.80; 12 qt., \$0.90; 15 qt., \$1.00; 20 qt., \$1.25

### The Ironclad



This pail is made from very heavy tin, well reinforced at the bottom and top, and fitted with a strong and durable handle—a very good "all around" pail.

#### Prices

10 qt., \$0.60

12 qt., \$0.65

14 qt., \$0.70



# The Gurler Sanitary Milk Pail

This pail was devised by H. B. Gurler, pioneer Illinois producer of certified milk, and has long been a favorite with those dairymen whose aim is to produce the very best and purest milk.

Properly used, this pail prevents dust and solid matter dropping into the milk while milking, which authorities agree is of vital importance in producing pure milk. The cover is removable and is made smaller than the opening in the pail. Over the opening is placed a layer of absorbent cotton between two thicknesses of sterilized absorbent gauze. The cover is placed over it, stretching the gauze or cotton over the opening. In milking, the milk is drawn directly through the cotton, which acts as a filter. The pail is emptied through the spout, fitted with a closely fitting cap.

The top part of the pail holding the absorbent cotton need not be removed until the milking is finished. The cotton and gauze are then removed; the cotton should be burned, but the gauze can be used several times if it is carefully cleaned and boiled each time after using.

This style of pail is much better than one with two separate rigid tops for holding cotton, because the gauze will naturally give after the milk strikes it, making the bacteria and solid matter less liable to be carried through into the milk.

The pail is made of heavy XXXX tin, carefully soldered, all seams and joints being loaded. It will be found very durable. We have sold thousands of them. Gurler Sanitary Pail, each.....\$ 1.75  
1 dozen Gurler Pails..... 18.00

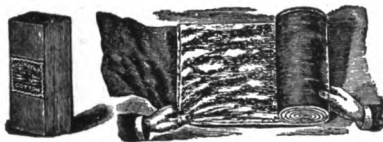


Gurler Pail.

## Supplies for Gurler Pail

Nothing but the very best grade of reliable absorbent cotton should be used. This we furnish and guarantee as represented. The cotton is put up in 1-lb. rolls, wrapped with tissue paper and again with strong blue paper and sealed so that it cannot become contaminated until the package is opened. A roll of cotton is about 17 ft. long and 12 in. wide.

The gauze is put up in large rolls, wrapped and wired. Each roll contains 100 yds., 36 in. wide.



Absorbent Cotton

## C. P. Sanitaire Milking Stools

These stools are made of steel and coated with porcelain enamel. They are light in weight, absolutely sanitary, and will last a lifetime.

The Style "A" is a single-piece stool, the seat, upright leg and foot being welded together by a special process that makes a perfect weld or joint and then is enameled, making the surface smooth and affording no lodgment for dirt and filth.

The seat of the Style "B" stool is the same size and shape as the Style "A," but is supported by three legs, which are securely riveted to the seat and are connected by a brace about half way down. The parts are all put together and securely riveted, and the whole is then heavily enameled, making it practically a one-piece stool.



Style B.



Style A.

A wooden milking stool, after a short period of use, becomes filthy. Furthermore, it is a short-lived affair. The sanitary stool, on the contrary, is always clean, will not absorb moisture or odors, will not dry out and fall to pieces, and is practically everlasting.

Style "A" Stool, enameled white.....\$1.50  
Style "B" Stool, enameled blue..... 1.50

## Refrigerating Machinery

We manufacture a complete line of ice-making and refrigerating machinery, in all capacities and for all purposes. Good, reliable refrigeration, and plenty of it, is essential to successful and profitable dairy manufacturing. In no industry is temperature control more important.

The use of natural ice does not meet all the requirements; neither is it the most economical. Generally speaking, a plant large enough to use our smallest refrigerating machine will find it in the long run more economical than to use ice even though the latter can be had for the bare cost of harvesting and storing.

Mechanical refrigeration is both clean and convenient. Natural ice brings more or less litter and muss into the workrooms. A large amount of labor is required to clean and prepare the ice for use. The melting ice, except in the very best types of refrigerators, produces dampness and furnishes ideal conditions for mold. With a machine the refrigeration is produced as wanted and conveyed through pipes wherever wanted about the plant. It can be used to do all the cooling work in a creamery, milk plant or ice-cream factory.

### Our System

Our machinery is of the ammonia compression type. The most prominent feature of this system is the ammonia compressor, but the other equipment is equally important and the success of the plant as a whole depends upon the proper arrangement with sufficient piping at the several points where cooling is to be done.

A complete ammonia compression system consists of the compressor, with oil trap, the condenser with liquid receiver and the expansion coils. The following description of the operations will explain the uses of the different parts of the system:

Anhydrous ammonia, the refrigerant used, is a gas at atmospheric pressure and normal temperature, but when under high pressure or at extremely low temperature it is a liquid. The liquid is first admitted to the expansion coils in a small stream. It evaporates, or changes, from a liquid to a gas, and in so doing extracts heat from the atmosphere, brine or whatever substance surrounds the pipes. The gas is then drawn from the coils by the compressor which discharges it under pressure to the condenser, where by means of water flowing over the pipe the gas is cooled and again becomes a liquid, passing to the liquid receiver, from which the expansion coils are supplied.

### High and Low Side

A refrigerating system naturally divides itself into two parts, viz., the compression and expansion sides. The compression side consists of the compressor, oil-trap, condenser and liquid receiver and is also called the high pressure side. The expansion coils constitute the expansion or low pressure side. The expansion side is where the actual work of cooling is done, while the purpose of the compression side is to put the ammonia into condition for use in the expansion coils.

In our Wizard Refrigerating Machine the entire compression side is assembled on one base and combined into a single machine, so that erection is much simplified. This type we build in 1½, 2½ and 4-ton sizes. On all larger sizes the several parts are separate and must be connected when the plant is erected,

## Refrigerating Machinery—Cont.

### Capacity Ratings

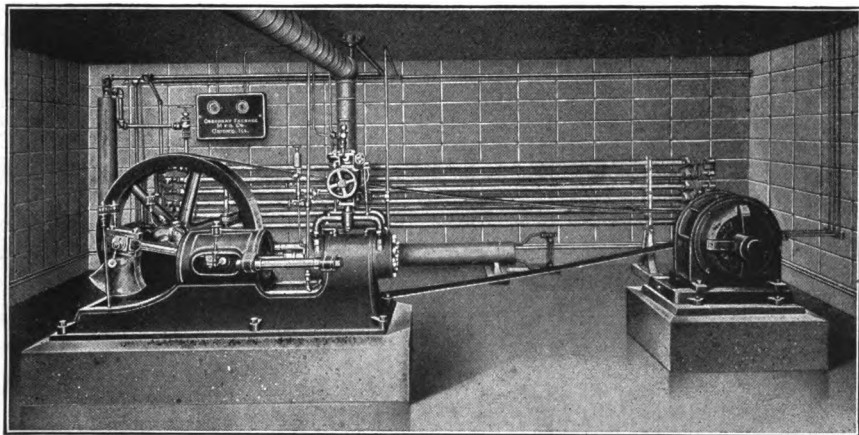
We build refrigerating and ice-making machinery in all capacities from 1½ tons up to 250 tons. The tonnage rating of a machine refers to the amount of refrigeration that machine will produce in 24 hours of continuous operation. It is not necessary to operate during the entire day, however, as the cold can be stored up in a large body of brine to be used as wanted. Where a machine is to be run for only a part of the day, a larger capacity is required. If, for example, the plant requires the equivalent of one ton of ice each day and it is desired to operate the compressor only six hours it will require a 4 ton compressor to do the work.

### Direct Expansion or Brine Circulation

For dairy work the refrigeration produced is applied to the work either by direct expansion or brine circulation. In the former, the liquid ammonia is allowed to expand in coils of pipe placed in the cooling room. In the brine circulating system the expansion coils are used to cool brine which is then circulated through the plant wherever wanted.

The direct expansion system costs less to install than does the brine circulating system, but the latter has advantages that offset the increase in cost. Sometimes a combination of the two systems can be adopted to advantage. Each case must be considered by itself and the system selected that will give best results.

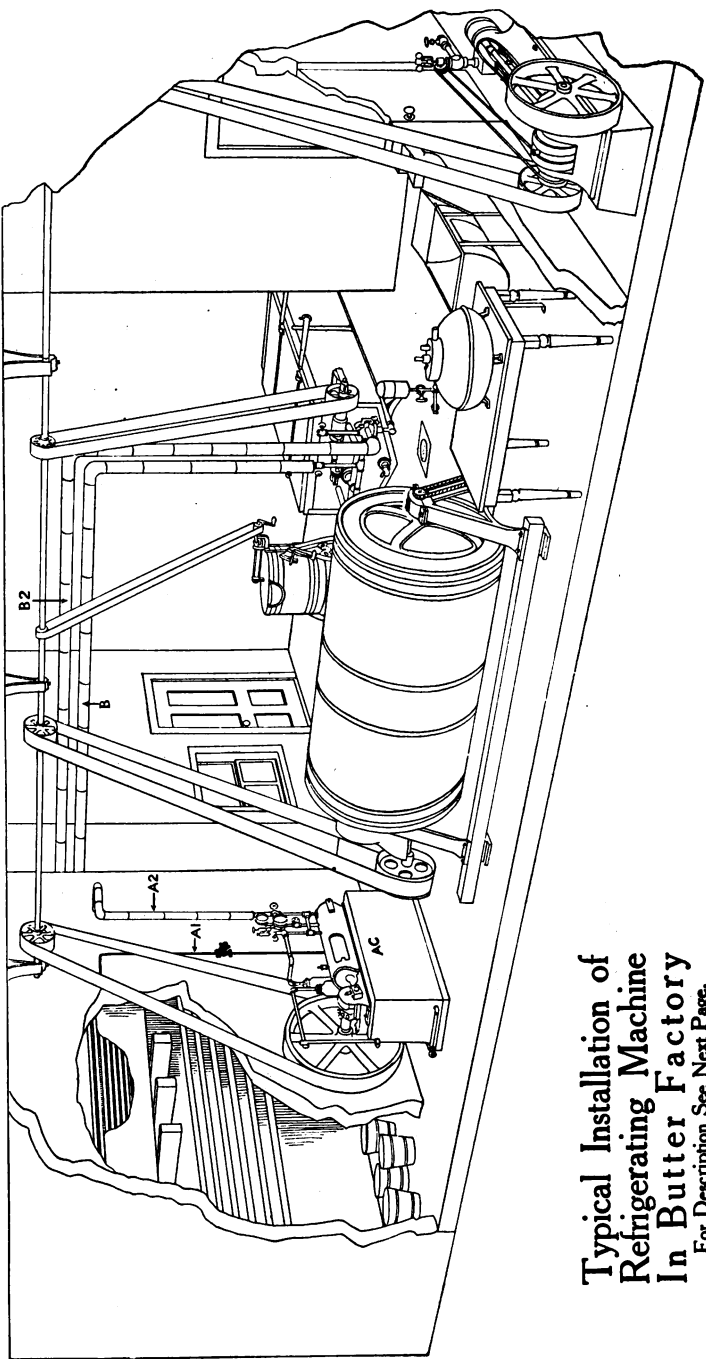
The following pages contain information of value regarding the application of refrigeration to dairy work.



The above cut is reproduced from a photograph of a refrigerating machine and represents a typical compression or high pressure side. The compressor in the foreground is our standard DeKalb machine. The oil trap stands in the left-hand corner. A double-pipe ammonia condenser is located along the farther wall; underneath is the horizontal liquid receiver. High and low-pressure gauges are mounted on a neat gauge-board on the wall.

### Ice Manufacturing and General Refrigeration

If interested in ice manufacturing or general cold storage work, write for special catalogues. In writing, please state the kind and size of plant you have or contemplate.



Typical Installation of  
Refrigerating Machine  
In Butter Factory  
For Description See Next Page.

## Creamery Refrigeration

The diagrammatic illustration on the foregoing page represents a simple butter factory with the usual items of general equipment and a refrigerating machine for doing the cooling, which in this case comprises the cream cooling in the ripener and the butter storage room. No pipes are shown excepting those employed in the refrigeration.

### Description of Equipment

The refrigerating equipment of this plant consists of a 2½ tons Wizard Self-Contained Refrigerating Machine (AC) belt-driven from overhead lineshaft, and located beside the cooling room, in which the expansion coils are placed. The small pipe, A1, is the liquid ammonia line leading to the expansion coils. A2 is the return pipe leading to the compressor. The cooling room also contains a rectangular steel tank in loft. A part of the expansion piping is placed in the tank and the balance in the form of a coil along the wall. The tank is filled with brine, so that when the compressor is running the room and contents are cooled and at the same time a portion of the refrigeration produced is stored in the brine. When the compressor is shut down the cold brine keeps the room cold.

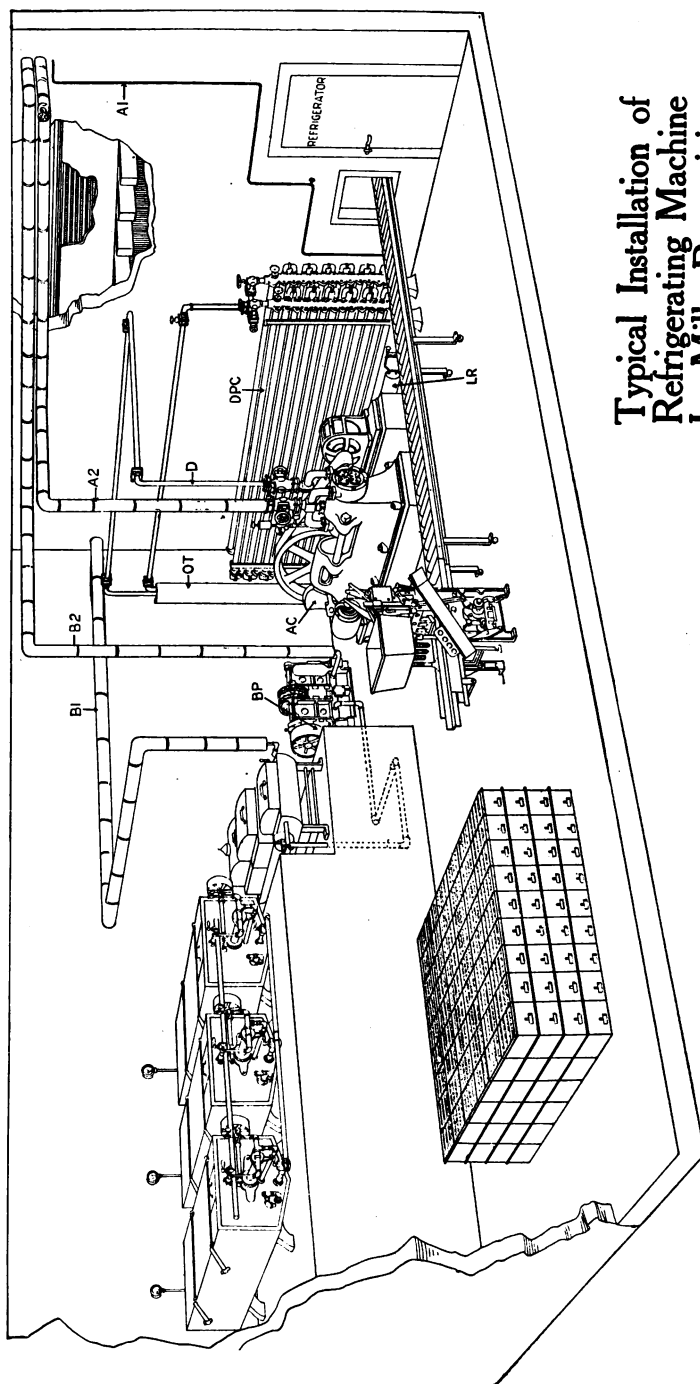
### Cream Cooling

The brine also serves as a reservoir from which to draw for cooling the cream. The two overhead pipes, B and B2, are respectively cold brine supply and warm brine return pipes connected with the ripener. The ripener in this case is a Wizard Agitator and can be connected up with brine, in the manner illustrated, without change or extras of any kind. The cold brine is connected to the coil inlet pipe and the return with the circulating pump discharge. The brine flows by gravity from the tank to the ripener and through the coil, emptying into the ice box at the rear end. From here it is taken by the pump and forced back to the tank in the cooler. The brine does not interfere with using water in the ripener coil, as by closing the valve in the brine supply pipe the coil will empty itself completely of brine and the pump will remove all the brine from the ice box. The ripener may be used for pasteurizing, then for cooling with water and finally for brine, by simply manipulating the valves. The brine is not diluted with water, nor is any of it lost when proper care is used.

We call special attention to the convenience and simplicity of this plant. But one engine which should have sufficient power to drive the churn and compressor at the same time, is required. The compressor is operated for a few hours each day while the other work is going on. It is conveniently located and can be seen by the buttermaker from any point in the work room. Once started it requires scarcely any attention. The extremely cold brine cools the cream very quickly and to any point desired, giving better control of the ripening and churning temperatures than is possible with ice cooling.

### Information Necessary to Estimate

In estimating the cost of a machine required to do the work in any particular plant, it is necessary that we have full information covering the work to be done, hours machine is to be run, temperatures required in different rooms, etc. Upon request we will send our special information sheets containing questions, answers to which we must have before estimate can be made.



**Typical Installation of  
Refrigerating Machine  
In Milk Pasteurizing  
And Bottling Plant**  
For Description See Next Page.

## Milk Plant Refrigeration

On the previous page we show a modern sanitary milk pasteurizing and bottling plant equipped with mechanical refrigeration. All piping shown pertains to the refrigerating system, and in the interest of clearness we have shown only such general equipment as is involved in the pasteurization, cooling and storage of milk and cream. A Wizard positive pasteurizer is shown, consisting of three heating and holding vats, all of which empty into the three-compartment, rotating disc cooler, two compartments for water cooling and one for brine. The same plan would be applicable to any make or type of pasteurizer.

### Description of Equipment

The reference letters on the diagram indicate the essential parts of the system, as follows: A C is the ammonia compressor, belt-driven from electric motor; D, the ammonia discharge; O T is the oil trap; D P C the double pipe ammonia condenser; L R the liquid receiver, the foregoing comprising the compression side of the machine. A 1 is the ammonia liquid line leading to the expansion coils submerged in brine in a tank in loft above the storage room. A 2 is the ammonia return pipe to the compressor. The cooling in this plant is entirely from the brine, although if necessary an expansion coil can be placed outside of the brine tank in the storage room.

### The Brine System

The brine circulating system consists of B1, the brine supply pipe, through which the brine flows by gravity from the brine storage tank in the refrigerator to the brine section of the cooler located on the platform, and thence, still by gravity, to BP, the Triplex Brine Pump, which forces the warm brine through pipe B2 back to the brine tank.

### The Refrigerator

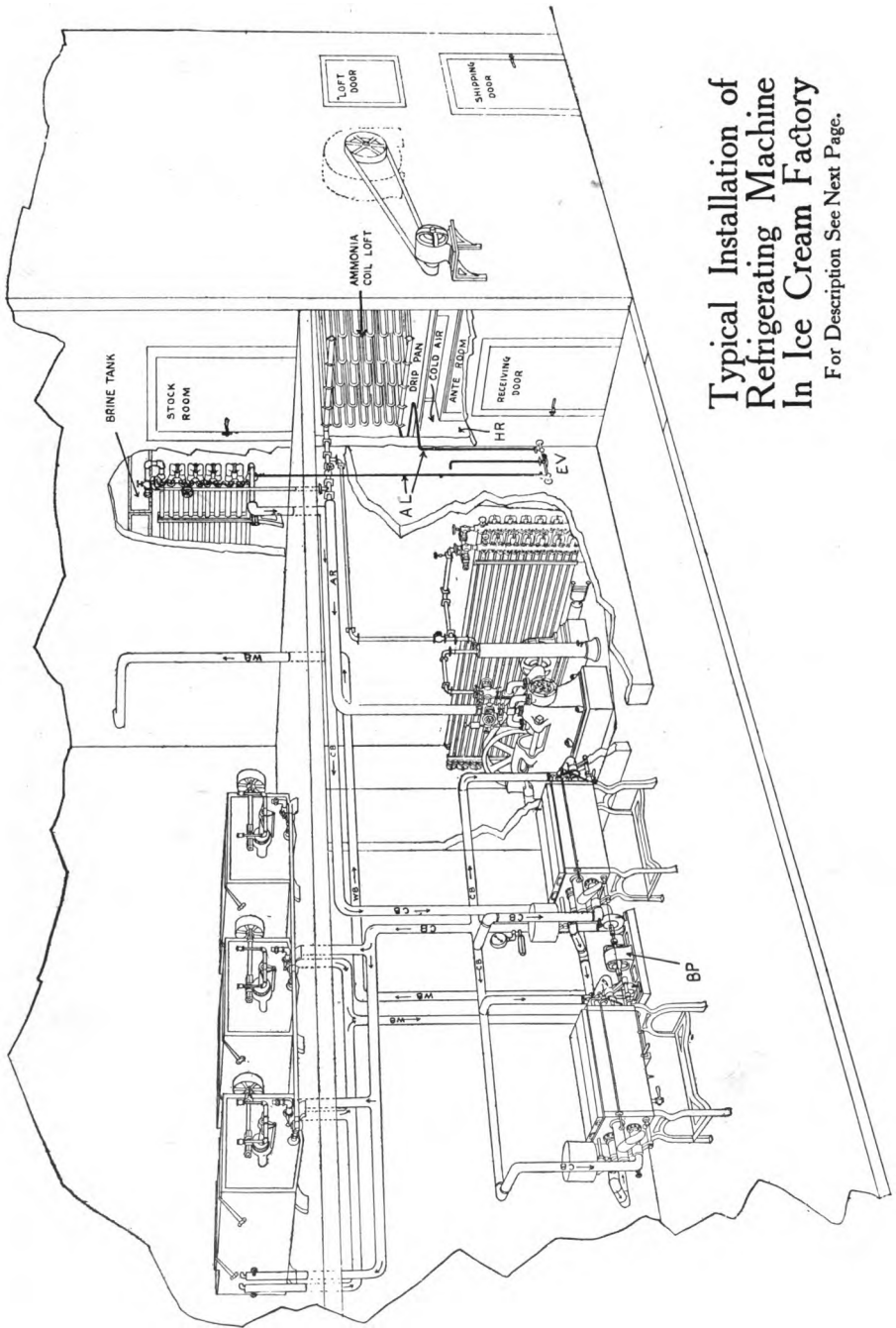
The brine tank not only serves as a supply tank for the brine used by the cooler, but also as a storage for refrigeration, by which the temperature of the refrigerator is held down over night. The tank is in a loft above the storage room, and a system of flues is provided for air circulation, so that the atmosphere in the refrigerator is kept cold and dry. The general arrangement of the tank and piping is shown in plan No. 5 on page 144. The proportion of piping allotted to brine cooling depends upon the conditions in each case.

Our aim in the diagram is to show the application of mechanical refrigeration to an average milk bottling plant. The arrangement of the machinery may be varied from that shown without changing the principles of the refrigerating system, also the refrigeration may be used for other purposes than indicated. If butter is manufactured, the ripener can be connected with the brine system. Vats for making artificial buttermilk can be connected in, as can also tubular coolers, or in fact any apparatus for cooling.

### Estimates

Our close association with all phases of the milk business, and especially with pasteurizing and bottling milk, places us in position to serve our customers in this line to their entire satisfaction. We are the only concern building both milk plant and refrigerating machinery and are therefore able to design plants properly proportioned to give best results.

Upon request, we will send information sheets with questions covering data necessary to make an estimate of size and cost.



**Typical Installation of  
Refrigerating Machine  
In Ice Cream Factory**  
For Description See Next Page.



# Ice Cream Plant Refrigeration

Mechanical refrigeration can be profitably applied to any wholesale ice cream factory. It takes the place of ice in freezing, in the hardening and in the storing. It permits of a more economical system of operation, requiring less space and fewer men for the same output. Besides reducing expenses, a mechanically refrigerated plant is more sanitary. All the dirt is confined to the boiler room and the slop to the wash room, away from the rooms in which the cream is frozen, hardened and stored.

The diagram on opposite page illustrates the application of mechanical refrigeration to a plant of average output, and the same principles are employed in smaller and larger installations, the arrangement of the equipment varying according to the conditions.

The compressor is belt-driven from electric motor, but of course can be driven by any kind of power. The stock storage room and mixing room are on the second floor, and the freezing and hardening rooms on the lower floor. Two expansion systems are employed, one for the hardening room and the other for the stock room and brine cooling, both drawing their ammonia supply.

The letters on the diagram indicate the following parts: E V are the expansion valves controlling the flow of liquid ammonia through the lines A L, leading to the expansion coils in the ammonia coil loft and the double pipe brine cooler, respectively.

## The Brine System

The brine storage tank is located overhead in the stock room on the upper floor. Brine flows by gravity through the double pipe condenser to the duplex centrifugal brine pump, B P, on the lower floor. This pump feeds the freezers and the mixers, the brine traveling through the pipes lettered C B, in the direction indicated by the arrows. The warm brine returns through the pipes W B to the other centrifugal pump, which returns it to the brine tank. A pressure gauge and thermometer are installed in the discharge pipe from the cold-brine pump.

## The Hardening System

The ice cream is hardened by the "Dry Hardening System," in which the packing cans are set on shelves, and cold, dry air circulated around them. The details of the hardening system are not shown in full for lack of space. The location of the hardening room is indicated by the letters H R. Cold-air circulation is obtained by a blower, which draws air through the expansion coil in the loft and discharges into flues leading to the hardening room. By properly arranging the equipment a good circulation of cold air is obtained in every part of the hardening room, and the hardening process is accomplished in a reasonable period, without muss, slop or waste. The dry hardening system is superior to others and we guarantee the successful working of any designed and installed by us.

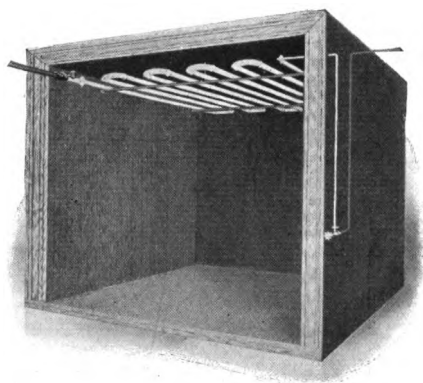
## Ice Making

In plants of large output it is frequently advisable to manufacture ice for packing purposes. An ice freezing tank and equipment can be installed for this purpose in any available part of the plant and the necessary ice manufactured at small expense. We do not recommend ice making unless the machine is to be operated 24 hours per day. In large plants this is usually advisable, however, as it enables the work to be done with a smaller machine and the investment is correspondingly smaller.

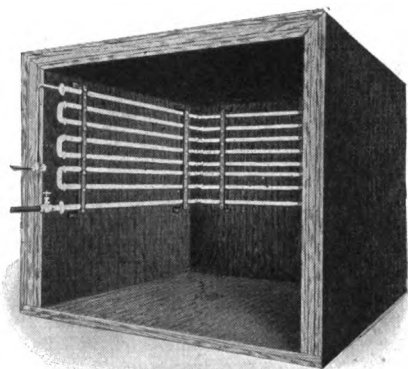
## Estimates

Write for information sheets containing questions covering data required to estimate.

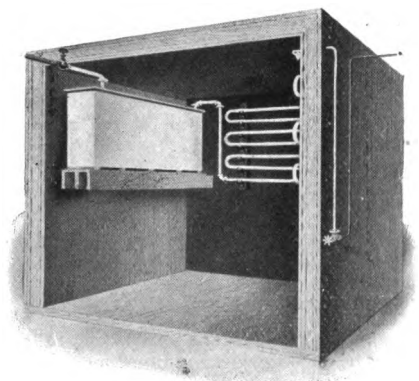
## Refrigerator Piping



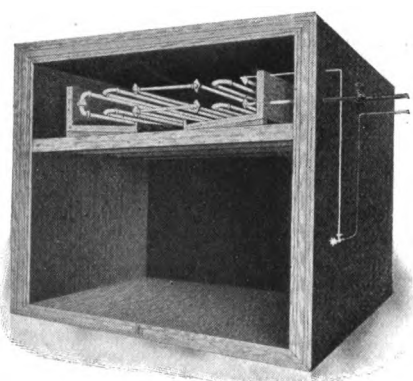
No. 1



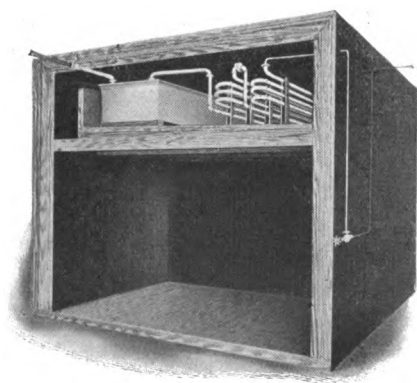
No. 2



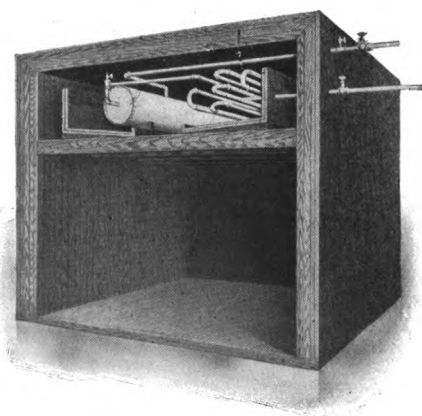
No. 3



No. 4



No. 5



No. 6

## Refrigerator Piping

The page opposite shows six methods of piping refrigerator boxes. Which of these is to be used will depend entirely upon circumstances. If the goods stored are not of a character easily damaged by moisture, the room can be piped on the ceiling, as shown in plan 1. Otherwise we pipe the room on the sides, as in plans 2 or 3. We advise, however, that the piping be placed in a loft as in 4, 5 and 6, the lofts forming drip catch pans under the coils. In plans 1, 2 and 4 either brine circulation or direct expansion of ammonia can be used, and these arrangements are adapted where the machine is run continuously, or when a rise of 8 or 10 degrees in temperature during a shut-down over night will not injure the goods stored.

In cases where a uniform low temperature is desired and the machine is not to be operated 24 hours per day, plans 3 or 5 for direct expansion, or plan 6 for brine circulation, is advised. Plan 3 is similar to plan 2, except that a rectangular tank, holding several hundred pounds of brine, is placed on the side of the room. The ammonia circulates through the exposed coils first and then through the coils submerged in the brine. At the end of each daily run the brine is cooled down to zero, or a little above, thus storing sufficient cold to maintain a low temperature while the machine is shut down. The success of this system depends upon the thorough insulation of the refrigerator walls.

In plan 5 the coils and tank are placed in a loft, the air circulating up a flue at the left, then across the brine tank through the coils and down again to the room through a flue at the right. This gives a very dry atmosphere as well as low temperature.

Plan 6 consists of coils and closed brine tank, through which cold brine is circulated. It is especially adapted for department store work, where the compressor, brine tank and all ammonia piping are compactly located in the basement, and the refrigerators are on the upper floors. The machine needs to be operated but from 5 to 14 hours daily, depending on conditions, and there is no ammonia piping in the boxes. For convenience, we tabulate below the uses to which each plan of piping is especially adapted.

Plan 1. For breweries, fish storage, ice storage rooms, also vestibules of cold storage rooms, and any place where moisture does no damage. Either brine or direct expansion.

Plan 2. For large and small storage houses. Intended for continuous operation. Either brine or direct expansion.

Plan 3. For small storage rooms, in asylums, and public institutions, grocery houses, provision stores, etc. For intermittent operation. Direct expansion only.

Plan 4. For large and small boxes, hog chill rooms, department stores, cold storage rooms. Gives very dry atmosphere. Continuous operation. Either brine or direct expansion.

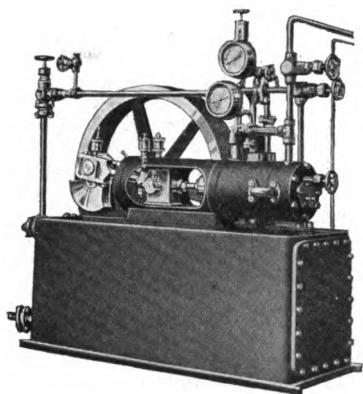
Plan 5. For butcher boxes, creameries, hotel storage rooms and small plants generally. For intermittent operation. Direct expansion only.

Plan 6. For department stores and wherever objection is made to ammonia piping in rooms, and machine cannot be run continuously.

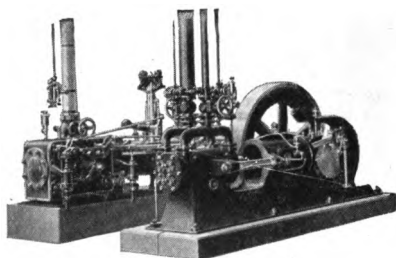
NOTE—Ice boxes with side ice bunkers, such as Northey and Bohn, may be piped similar to plans 4, 5 and 6, except that piping tanks, etc., will be on the side instead of overhead. The air circulation of side-piped boxes is exactly the same as when ice is used.

## Refrigerating Machines

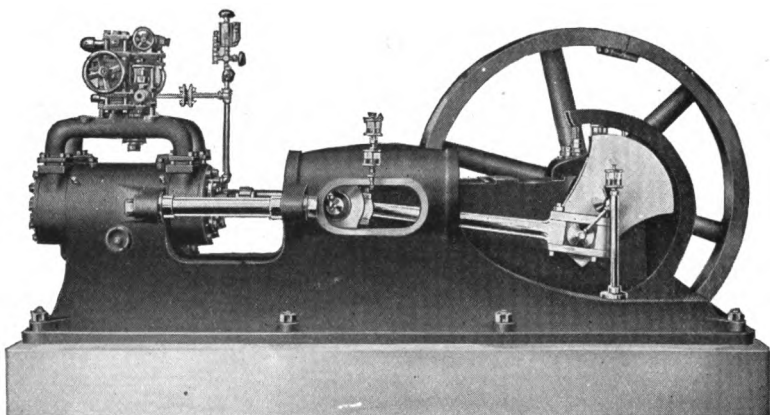
Special Descriptive Bulletins  
will be sent on application.



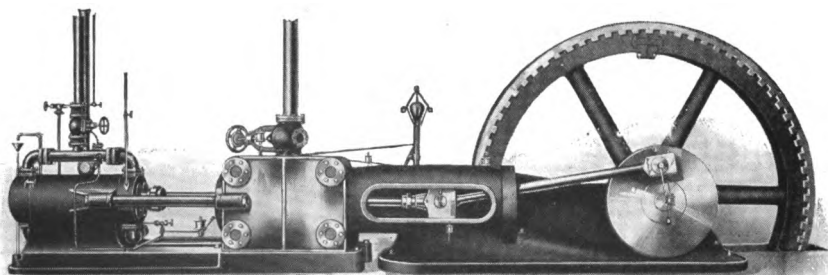
Wizard Self Contained Machine  $1\frac{1}{2}$  to 4  
Tons. Direct Expansion



DeKalb Compressor Cross Con-  
nected to Engine

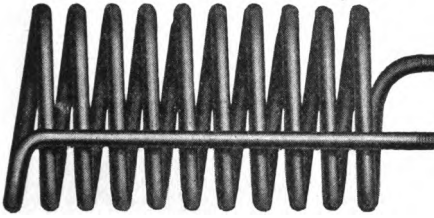


DeKalb Compressor for Belt Drive, 5 to 30 Ton Capacity



125 Ton DeKalb Compressor Connected Tandem to Corliss  
Engine. Prices on Application.

## Welded and Bent Coils



Spiral Coil.

Coils of any size or style made to order from specifications and sketches.

Prices on application.

### Direct Expansion Pipe

made of special wrought iron pipe, two-inch diameter, with flanges screwed and soldered on. All pipes carefully tested before shipment. Special lengths and sizes made to order. Prices on application.

### Insulating Paper

Good insulation is an important factor in every ice and refrigerating plant. The most effective is obtained by use of alternate air spaces, boards and papers. The best paper is none too good to answer requirements for the best insulation. We shall be pleased to make quotations on any amount of this desired.

### Granulated Cork

Cork is very good material for insulating, because of its lightness and non-decay. We have a fine quality of cork on hand at all times and can fill orders promptly. Prices on application.

### Cork Board

For insulating solid walls there is nothing better than cork board. It is made of granulated cork compressed in molds and baked. The size of the cork board is 36 inches long by 12 inches wide and is made 1 inch, 1½ inch, 2 inches, 2½ inches and 3 inches thick.

Prices on application.

### Mineral Wool

Wool is often used as filling material and is besides useful as a guard against rodents and vermin. We can meet orders on short notice.

### Calcium Chloride

is coming into wide use as a substitute for common salt in the making of brine. In many ways it is superior to salt for this purpose. Many cold storage houses use it also for drying purposes.

### Ammonia

We carry a large stock of pure Anhydrous Ammonia on hand and can fill orders promptly at market prices. Prices quoted are for regular size cylinders, delivered. Freight on empty cylinders for credit being incumbent on seller from point at which delivery is made.

Prices on application.

**Special Catalogue of Ammonia Fittings and Ice Plant Supplies will be sent on Request.**

## Northey Refrigerators



All things considered, the Northey is much cheaper in the end than a home-made refrigerator. The average carpenter, not being familiar with the principles of refrigeration, cannot make as satisfactory or economical a refrigerator as the Northey. Unless the insulation is right and a good circulation of dry air is provided the refrigerator is bound to be a failure, wasteful of ice and likely to become moldy.

The walls are built in sections, with triple-matched joints that are easily fastened with lag bolts. Walls are four inches thick, double-boarded, and are insulated with four thicknesses of paper and two inches of mineral wool. Heavy galvanized iron and rubber strips protect the door sills and make the refrigerator, when closed, air tight. The ice chamber is on the side and so arranged that it is easy to fill with ice. The special construction of the chamber and the manner of providing air circulation insures the dryest possible air, and extreme low temperature with a very small ice consumption.

We furnish refrigerators either painted (Style P), or finished in the natural grain of the wood (Style Q). They are made single and double. Single refrigerators have ice bunker on one side and a single storage chamber; double refrigerators have center ice bunker with storage rooms on each side.

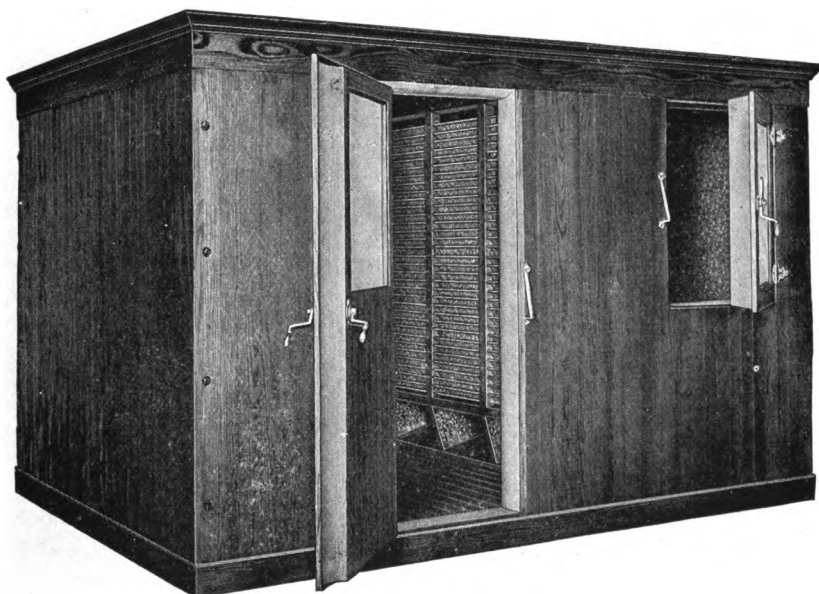
Size	Size	Size	Size
4 x 6 Single	8 x 8 Single	8 x 18 Double	10 x 18 Double
5 x 6 Single	8 x 10 Single	8 x 20 Double	10 x 20 Double
6 x 6 Single	8 x 12 Single	10 x 10 Single	12 x 12 Single
6 x 8 Single	8 x 12 Double	10 x 12 Single	12 x 14 Double
6 x 10 Single	8 x 14 Double	10 x 14 Double	12 x 16 Double
6 x 12 Single	8 x 16 Double	10 x 16 Double	12 x 18 Double
6 x 12 Double			12 x 20 Double

The 6 x 10 will hold about 100 tubs of butter. The 8 x 12 will hold about 125 tubs of butter.

Prices on regular and special sizes are quoted on application. Write for complete description.

# Bohn Refrigerators

## Patent Air Siphon System



An examination of the illustration will show the principle on which this system of refrigeration depends. The cold in the ice bunker chills or cools the metal syphons, separating the ice bunker from the refrigerating or storing room. As cold air naturally falls, while warm air rises, this creates a constant current through the syphons. The cold air falls through the grate at the bottom of the ice bunker, is conveyed thence into the refrigerating or storage room, where the vacuum created causes it to again rise and repeat the process. There is, therefore, a continuous current of air passing from the ice bunker into the cooling room, and again from the cooling room through the syphons into the ice bunker. Therefore, every part of the cooling room becomes of the same temperature as the air in the ice bunker.

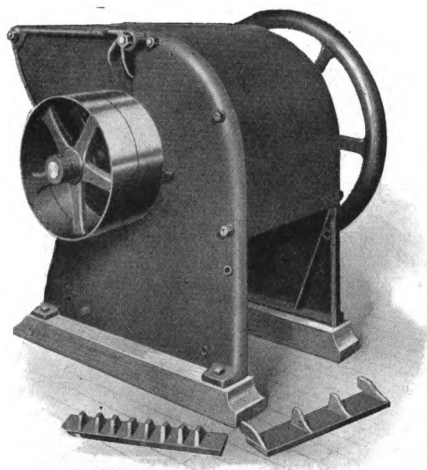
The circulation of air outlined above not only maintains a low and uniform temperature, but the air as it passes through the syphons and comes in contact with the ice is immediately relieved of all odors and moisture, which are condensed on the ice and pass off through the waste pipe with the water from the melted ice, so that it is an impossibility for any moisture to remain in the storage room. This is the secret of one of the most important results obtained from the use of this system of refrigeration, which is prevention of mold.

### Standard Sizes

No.	Wide, Feet	Long, Feet	High, Feet	Contents, 60 lb. Tubs	Surface, Feet
A	6½	7½	7	48	284
B	6½	9½	7	64	338
C	6½	11½	7	80	391
D	7½	11½	7	100	440
E	9	11½	7	120	489
F	10½	11½	7	140	538
G	9	13½	7	144	558
H	10½	13½	7	168	607
I	11½	13½	7	192	661
J	13	14½	7	252	795

Refrigerators are made up in sections and so marked that any carpenter can set them up quickly. Every Bohn refrigerator is fully guaranteed. Special circular and price on application.

## The Victor Ice Breaker



A good ice breaker saves so much in time, wages and ice that it is shortsighted economy even for the user of ice in moderate quantities to continue the old, laborious and unsatisfactory methods. Any good ice breaker is a good investment.

There are on the market several types of machines for reducing cake ice to sizes suitable for use. There are ice crushers, ice chippers or cutters and ice breakers. Ice crushers and ice chippers work under the disadvantage that ice will withstand great pressure. It is, however, extremely brittle and is easily shattered by a sharp pointed pick used in the right way. Many an experi-

enced ice man no longer uses hatchets to break large cakes of ice into smaller blocks for household use, but instead uses a sharp hand pick and the rapidity and accuracy with which he cuts up a large cake is a marvel to the layman.

### The Right Way

An ice breaker—one with sharp pointed picks that break the ice in the easiest way—saves power, has greater capacity in proportion to size, lasts longer and is cheapest in the end. The Victor is made right; strong, heavy, substantial, with a good fly-wheel, large shaft, babbitted bearings that can be taken up for wear and, above all, is accessible. No matter how good a machine may run when new, its continued good service depends upon the ease with which it can be kept in first-class condition.

The Victor Ice Breaker is a machine of our own manufacture, embodying all the latest improvements. The cut on this page shows the machine as it appears ready for service. That on the next page shows it with the hinged hopper swung up and discloses the cylinder with removable picks and bearings. The hinged hopper is one of the most important improvements in ice breakers. There are no bolts to remove, no pieces inserted. If you want to get at the cylinder or the bearings, simply raise the hopper. By doing so and then removing the bearing caps, the shaft, cylinder, fly-wheel and pulleys can be rolled out of the machine.

### Semi-Steel Frame

All castings are made of semi-steel. Semi-steel is a mixture of steel and iron and is practically 50 per cent stronger than cast iron. Furthermore, it is closer grained, more uniform and less likely to develop flaws in molding.



## The Victor Ice Breaker---Cont.

### A Few Words About the Picks

Picks are made of drop-forged steel, sharply pointed at one end, the other being specially shaped to fasten securely in slots cut into the cylinder. They do not require bolts, rivets, nuts or wedges to hold them in nor are any special tools required to remove or replace them. A light tap with a hammer on the back end of the pick will ordinarily loosen it sufficiently so that it can be taken out by hand. Nothing could be simpler or more satisfactory than this style of pick.

### Breaks Ice to Any Size and Delivers Front or Rear

The size of the broken pieces can be changed from one size to another in less than one minute and without removing any bolts or nuts. By raising the hopper a few inches the front plate swings out so that one comb can be slipped out of the groove and another put in its place. In addition to this the plate can be moved up to or away from the drums to three positions which, with the changes in combs, makes in all, six sizes of broken ice. For very coarse ice the comb can be removed and every other pick taken out of the drum.

Broken ice can be delivered either in front or rear by simply changing the apron, requiring the removal of only four bolts.

**SIZES**—These machines are built in four standard sizes, having a range of capacities sufficient to meet the requirements of all users. All machines are complete with fly-wheel, tight and loose pulleys for belt and the three smaller sizes may be operated by hand power.

### Specifications.

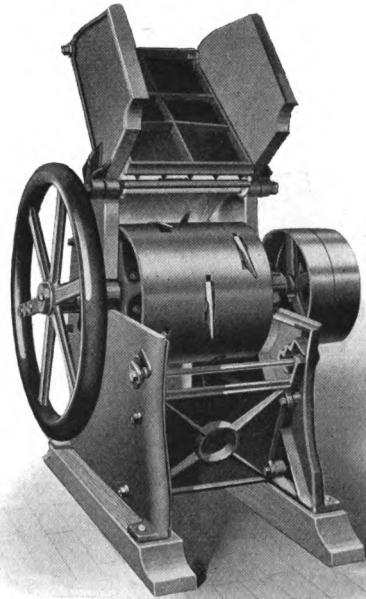
**No. 1.** Floor space 26x29 inches. Takes in ice 8x10 inches, of any length. Hand or power drive. T and L pulley 10 inches diameter by 2¼-inch face. Approximate shipping weight, 400 lbs. List price, \$40.

**No. 2.** Floor space 32x44 inches. Takes in ice 10x12 inches, of any length. Hand or power drive. T and L pulleys 12 inches diameter by 2¾-inch face, 70 R. P. M. Capacity about 3 tons per hour. Requires about 1 H. P. at full speed and capacity. Approximate shipping weight 660 lbs. List price \$60.

**No. 3.** Floor space 38x38½ inches.

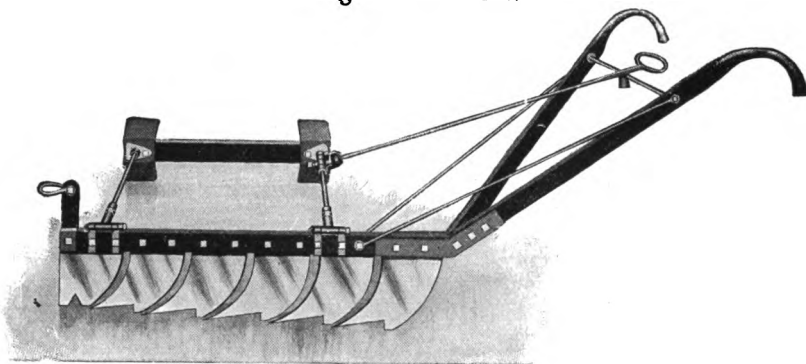
Takes in ice 14x15 inches, of any length. Hand or power drive. T and L pulleys 14 inches diameter by 3 1-2 inch face, 100 R. P. M. Capacity about 12 tons per hour. Requires about 2 H. P. at full speed and capacity. Approximate shipping weight 960 lbs. List price \$75.

**No. 4.** Floor space 54x38½ inches. Takes in ice 14x26 inches, of any length. Power drive. T and L pulleys 18 inches diameter by 4 1-4 inch face, 100 R. P. M. Capacity about 25 tons per hour. Requires about 3 1-2 H. P. at full speed and capacity. Approximate shipping weight 1,300 lbs. List Price \$115.



## Ice Tools

### Swing Guide Plow



#### Prices

8 inches, with improved clearing tooth and 22-inch swing guide.....	\$25.00
10-inch, with improved clearing tooth and 22-inch swing guide.....	30.00
Adjustable swing guide for marking 16, 18, 20 and 22 inches, extra.....	1.50
Swing guide for wider markings, extra.....	1.00

### Ice Saws



Ice saw, four feet.....	\$4.50	Ice saw, five feet.....	\$5.00
Ice saw, four and one-half feet..	4.75	Ice saw, five and one-half feet...	6.50

### Tongs

Steel tongs, swell handle, span	
14½ in. ....	each, \$1.20
Steel tongs, swell handle, span	
16½ in. ....	" 1.25
Steel Loading tongs, span 24	
inches ....	" 1.45
Hollow handle tongs, span 16½	
inches ....	" 2.00
Edging-up tongs, steel.....	" 1.50
Chain handle tongs.....	" 1.40
Dredging tongs .....	" 1.75



### Hoisting Tongs

Hoisting tongs, with patent claw.....	\$6.00
Hoisting tongs, with claw points.....	4.50

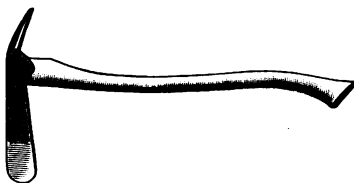
## Ice Tools

### Chisel Bar



Chisel bar .....each. \$3.50

### Ice Axe



Ice axes .....each, \$1.75  
Chest hatchets .....each, 1.00

### Ice Chisel



Steel blade, 3-foot wood handle.....each, \$2.25  
Steel blade, 8-inch wood handle.....each, 1.50

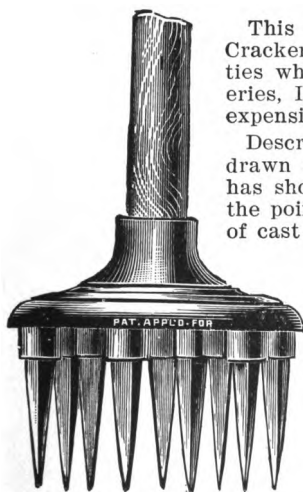
## The American Ice Cracker

This cut shows the "business" end of the American Ice Cracker, which has made an enviable record in the localities where it has been in use. Just the thing for Creameries, Ice Cream Factories and Dairies. Durable and inexpensive.

**Description.** The points are made of  $\frac{1}{2}$ -inch tool steel, drawn into triangular points and tempered as experience has shown to give the best results. The head into which the points are securely fastened and socket for handle are of cast iron, for weight.

**Operation.** Place the ice in the box and then use the cracker to reduce it to the size required.

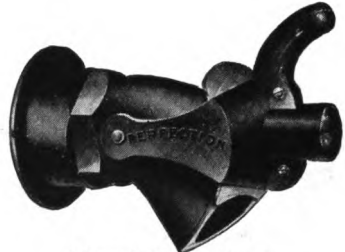
**Advantages.** One man or boy can do more in making ice fit for the freezer or packing purposes than two men can with axes or sledges, and with little waste in the form of snow ice. The size of the pieces will be uniform, and the fineness depends on the time they are subjected to the action of the cracker. The labor of using the cracker is far less than any previous mode of crushing ice. Price.....each, \$1.50



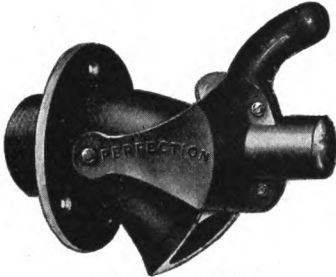
## "Perfection" Gates



No Flange, Outside Thread



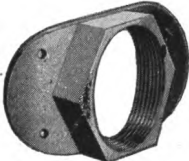
Flanged, Inside Thread



Flange Churn Gate



Weigh Can Gate



Weigh Can Collar



Molasses Gate

### Sizes and Prices

1 1/4 inch.....	each, \$1 40	3 inch.....	each, \$3 00
1 1/2 inch.....	each, 1 75	Weigh can collars.....	85
2 inch.....	each, 2 50	Gate and collar complete.....	3 85

### Churn Gates

	White Metal.	Iron Handles	
1 inch.....	each, \$1 75	1 1/2 inch.....	each, \$2 50
1 1/4 inch.....	each, 2 00	2 inch.....	each, 3 00

### Price List of "Perfection" Gate Extras

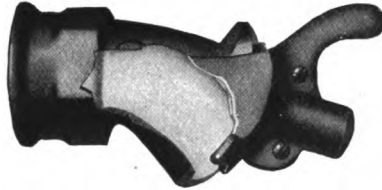
Handles			
1 inch, right or left.....	each, \$0 15	Per set and screws.....	\$0 30
1 1/4 inch, right or left.....	each, 15	Per set and screws.....	30
1 1/2 inch, right or left.....	each, 20	Per set and screws.....	40
2 inch, right or left.....	each, 20	Per set and screws.....	40
3 inch, right or left.....	each, 30	Per set and screws.....	60
Caps (Brass)			
1 inch.....	each, \$0 40	1 inch.....	each, \$0 10
1 1/4 inch.....	each, 45	1 1/4 inch.....	each, 10
1 1/2 inch.....	each, 50	1 1/2 inch.....	each, 15
2 inch.....	each, 60	2 inch.....	each, 15
3 inch.....	each, 1 00	3 inch.....	each, 20
Springs (Brass)			

### Molasses Gates

No. 1, 1 inch.....	each, \$0 60	No. 4, 1 1/2 inch.....	each, \$ 90
No. 2, 1 1/4 inch.....	each, 70	No. 5, 1 1/2 inch.....	each, 1 00
No. 3, 1 1/2 inch.....	each, 80		

## Sanitary Perfection Gates

Porcelain Lined



The "Sanitary Perfection" is a regular "Perfection" Gate with a heavy lining of pure porcelain.

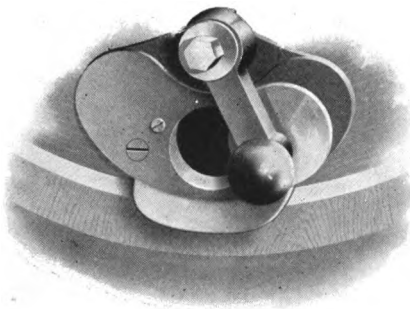
The interior surface is as smooth as glass, perfectly white, non-absorbent and can be cleaned with ease.

For Weigh Cans, Receiving Vats, Cheese Vats, Cream Vats, Ripeners, and all purposes where a cleanable faucet is desirable.

### Price

1½ inch, inside thread	.....each	\$3 50
2 " " "	....."	5 00
3 " " "	....."	6 00
3 " outside "	....."	6 00

## The New Victor Churn Gate



The cut shows the New Victor Gate in position on the end of the churn. The bore is straight and accommodates the regular style elbow churn strainer. The method of making the gate tight is the same as for the Perfection gate, consisting of a cap held against the face of the gate by a spring. The cap is self-grinding. The gate may be fastened to any churns now in use. Furnished free on all Victor churns hereafter.

### Price

2 inch gate .....\$3.00

## The Disbrow Churn Gate

Closes on inside end. Furnished free on all Disbrow churns.

Price, each .....\$2 00



## The Challenge Butter Printer

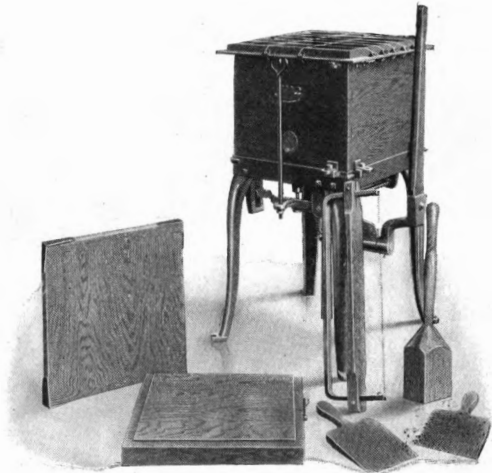
Makes eighteen 1-lb. prints at one cutting and cuts ninety prints, weighing 16 ounces each, from ninety pounds of butter.

The boxes hold 90 pounds each, and are provided with removable covers and bottoms. A simple latch holds the bottom in position and may be quickly released when the box, minus cover and bottom, is placed on the printer. Instead of using the box bottom for a plunger to force the butter out we use a special platen, which is a part of the machine. This platen is enameled, which will not stick to the butter, and is backed by a rigid iron supporting plate.

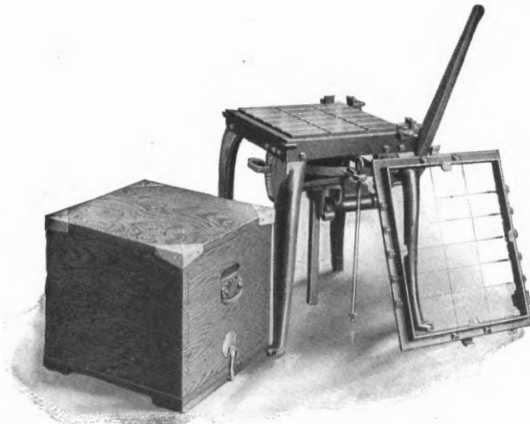
The improvements embodied in the 1912 model printer make it simpler, stronger, more convenient and more durable.

We have done away with the rack and pinion method of raising the piston plate, and use a friction lift that is simpler, more powerful and less liable to breakage. The piston rod is simply a square bar of steel having two bearings and operated by a rock shaft and two friction dogs, which alternately elevate the piston as the lever is worked to and fro. The piston has a practically continuous upward movement, twice as fast as the old way. It stops when the lever stops, and by a simple movement is returned automatically to the bottom.

Attention is called to the absence of projections above the base of the machine and the full box of butter may be put on the base from any of three directions.



Complete Machine for  
Cutting from 90-lb. Boxes.



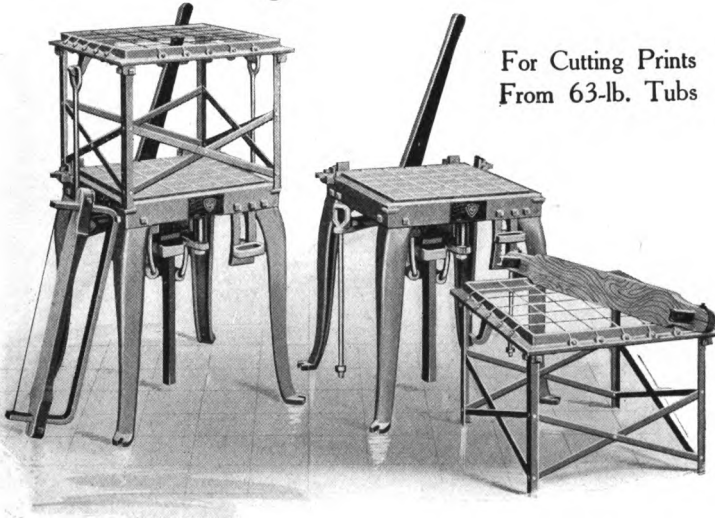
Showing Box and Cutter Frame Removed.

and has cross-piece to prevent warping, also neat extension corner irons to hold it on the box. The box bottoms have improved fasteners to hold them to the box.

**Construction** — Base, cutter frames and leg castings are semi-steel, working parts are machine steel. Piston plate is semi-steel, white porcelain enameled and thoroughly sanitary. Metal parts are all hot process galvanized to prevent rust and corrosion from the action of brine. It is a high-grade machine throughout and fully guaranteed in every respect.

**Boxes**—Made of one-piece cypress with dove-tailed corners, galvanized iron binding around top, corner irons on the bottoms, and are equipped with both drop handles and finger grips for handling. Box cover of same material as box

## The Challenge Butter Printer—Cont.



For Cutting Prints  
From 63-lb. Tubs

### Machine for Cutting Tub Butter

The tub cutting machine is similar to the box cutter in all respects except that the piston plate and cutting frame are made for cutting prints slightly shorter and thicker than prints from boxes, which is necessary in order to get 36 prints from a 63-pound tub.

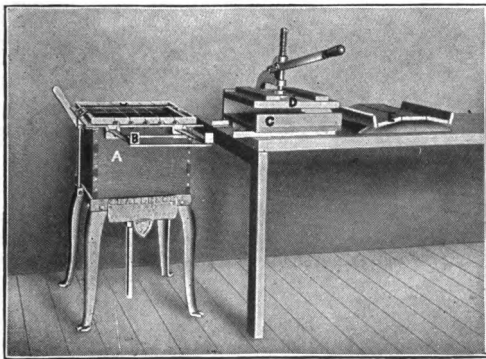
The prices are as follows:

**For Box Work Only**—Cuts prints 2½ by 2½ by 4%. Makes 90 prints from one box in five cuts of 18 each. Complete as shown in Fig. 1.....\$45.00

**For Tub Work Only**—Cuts prints 2 9-16 by 2 9-16 by 4 5-16 inches, makes 36 prints from 63-pound tub in three cuts of twelve each. No box is furnished .....\$45.00

**Complete Machine for Both Box and Tub Work**—Comprises all necessary attachments for both kinds of work.....\$50.00

**Extra Boxes**.....each, 3.50



### The Challenge Imprinter

This is a device for imprinting a design upon prints when the Challenge Printer is used. It consists of a bracket "B" attached to the Printer "A," a tray "C" for transferring the butter to the imprinter "D." A downward movement of the lever impresses the design on all the prints made at one cutting. The prints are then turned upside down on the spreader board "E," from which they are removed for wrapping. The process is very rapid.

A complete imprinting outfit consists of the bracket, two trays, two spreader boards and the imprinter proper.

The cost of carving varies with the intricacy of the design and we therefore price it without carving.  
Price .....\$20.00

Send sketch of design wanted and we will quote price on carving.

# Butter Printer

## The "Acme"



This is doubtless the most popular butter printer on the market. It is made for two-pound, one-pound or half-pound prints as desired; will put out 25 pounds of half-pound, one-pound prints, or 30 pounds (15 prints) of two-pound prints at one operation. Unlike most butter printers, it does not shrink the butter in printing any more than does the process of packing in tubs.

In operation the butter is packed into the rectangular box with the packers furnished; when full the surplus butter is struck off with trimmer. The cutting frame is then placed on top of the box and the whole swung over and the butter forced through the cutting wires onto the tray. This tray is adjustable and by a slight movement the prints may be separated, thus preventing danger of musing in wrapping. Prints can be wrapped at once or placed in the cooler to harden, as is most convenient.

This is one of the most rapid printers made and prints every brick square and true.

With each printer is included four patent adjustable trays, two packers, one ladle, and one trimmer, also full directions for operating.

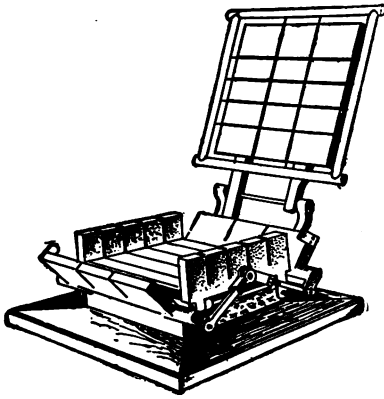
### Sizes and Prices

No. 1 Printer, for 15 2-lb. Bricks	6 3 $\frac{3}{8}$ x 3 in., at one impression	.....\$35.00
No. 2 Printer, for 25 1-lb. Bricks	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 4 $\frac{5}{8}$ in., at one impression	..... 35.00
No. 3 Printer, for 50 $\frac{1}{2}$ -lb. Bricks	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 2 5-16 in., at one impression	.... 38.00
No. 4 Printer, for 50 $\frac{1}{2}$ -lb. Bricks	1 $\frac{3}{4}$ x 1 $\frac{3}{4}$ x 3 $\frac{1}{2}$ in., at one impression	..... 38.00
No. 5 Printer, for 16 1-lb. Bricks	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 4 $\frac{5}{8}$ in., at one impression	..... 30.00
No. 6 Printer, for 9 1-lb. Bricks	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$ x 4 $\frac{5}{8}$ in., at one impression	..... 28.00

Other sizes made to order when desired.

Extra Butter Trays, 50 cents each. Extra Butter Packers, 35 cents each. Extra Butter Ladles, 25 cents each. Extra Butter Trimmers, 25 cents each. Plain Followers and Frames go with each machine. Carved Following Boards, when ordered, at reasonable cost.





## American Butter Printer

This is a new printer, very unique in design. It is easy to manipulate. Prints rapidly and leaves the butter in good shape, either to wrap or put in cooling room.

This machine is just what the name implies, a printing and weighing machine, making each print of accurate weight and of a perfectly true and uniform style.

Each machine is supplied with four following boards or trays which are used in removing the butter from the machine, and, if desired, butter can be left on these and placed in the refrigerator to thoroughly harden before being wrapped for shipment.

### Sizes and Prices

10-lb. ....\$20.00	20-lb. ....\$27.50	25-lb., special size.....\$30.00
15-lb. .... 25.00	25-lb. .... 30.00	Size of print, $2\frac{3}{8} \times 3\frac{1}{4} \times 3\frac{3}{4}$ .
Size of print, $2\frac{1}{2} \times 2\frac{1}{2} \times 4\frac{3}{8}$ .		50 $\frac{1}{2}$ -lb., special size..... 32.50
20 $\frac{1}{2}$ -lb....\$25.00	40 $\frac{1}{2}$ -lb....\$30.00	Size of print, $2\frac{3}{8} \times 1\frac{5}{8} \times 3\frac{3}{4}$ .
30 $\frac{1}{2}$ -lb. ... 27.00	50 $\frac{1}{2}$ -lb.... 32.50	15 2-lb., special size..... 32.50
Size of print, $2\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{3}{8}$ .		Size of print, $6 \times 3\frac{3}{8} \times 3$ .

Each Factory Printer sent complete with four trays, one butter packer, one butter ladle, and one trimmer.

Extra Trays .....	each, \$ .50	Large and Substantial Printing
Extra Cutting Wires.....	" .02	Tables .....
		each, \$2.50

## The Wizard Butter Printer

The Wizard is intended for use in dairies and small creameries. It is simple and very rapid; cuts

each print square and true, and uniform in weight.

The box is packed full of butter, which is then struck off even with the top.

The following board is put into place, and the box raised on the

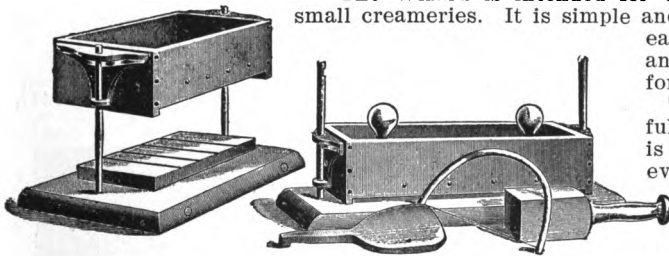
upright standards, forcing the cutting wires through the butter and cutting it into uniformly perfect prints. The butter does not drop from the box, consequently the prints are not damaged.

### Sizes and Prices

5-lb. ....\$6.00	8-lb.....\$8.00	10 $\frac{1}{2}$ -lb. ...\$ 7.00	16 $\frac{1}{2}$ -lb....\$10.00
Size of prints, $2\frac{1}{2} \times 2\frac{1}{4} \times 4\frac{3}{8}$ .		Size of prints, $2\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{3}{8}$ .	
5 2-lb.....\$8.00	8 2-lb.....\$10.00		
Special sizes made to order.			

## Print Boards

We are prepared to make carved print boards to go with the American or Wizard Printers, of either names, initials, or monograms, for which we make a nominal charge. The new feature in this respect is that the letters are raised on the wood instead of being cut into the wood, and thus pressing the letters into the butter instead of raising on same. Any one accustomed to print butter will at once see the advantage of this, as the design will not become obliterated in packing and shipment.



## Butter Printers

### The Up-to-Date No. 1

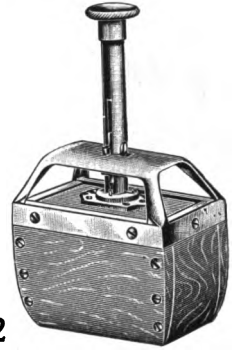
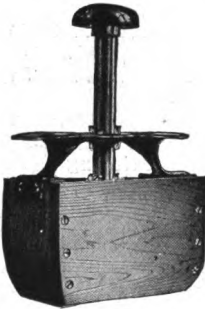
This improved Butter Mold and stamp is self weighing or gauging. The weight adjustment is regulated by a catch that moves up and down in a slot in the upright standard and is kept in place by a set screw. The adjustment is very simple.

The process of printing is very rapid. With little practice a person can easily mold from ten to fifteen prints per minute.

Gives accurate weights when properly adjusted. Prints  $4\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{3}{8}$  inches. It is made of close-grained wood with gun metal nickel plated top and trimming.

**Price**  
With plain (uncarved) print block (to print pounds)....\$4.00

Extras	
Frame .....	\$2.25
Post .....	.60
Cap .....	.40
Clamp .....	.30
Adjusting Slide.....	\$ .20
Clamp Screw .....	.05
Adjusting Screw.....	.05



### Up-to-Date No. 2

This Butter Mold is essentially like the Up-To-Date No. 1 in its workings and construction except that there is no metal band around the top.

#### Prices

With plain (uncarved) print block.

To print pounds $4\frac{1}{2} \times 2\frac{1}{2} \times 2\frac{3}{8}$ inches.....	\$3.00
To print two pounds $6 \times 3 \times 3$ inches.....	4.00
To print two pounds $4\frac{1}{2} \times 5 \times 2\frac{3}{8}$ inches.....	3.50

#### Extras

Frame .....	\$1.10	Clamp .....	.20	Post .....	\$ .60
Cap .....	.40	Clamp Screw..	.05	Slide .....	.40
				Slide Screw...	.05

### "Ideal Lever"

Regular sizes:  $\frac{1}{2}$  lb. printer,  $3\frac{1}{8}$  in. long by  $2\frac{1}{4}$  in. wide; 1 lb. printer,  $4\frac{3}{4}$  in. long by  $2\frac{1}{2}$  in. wide; 2 lb. printer, 6 in. long by  $3\frac{1}{4}$  in. wide. Special sizes made to order.

#### Sizes and Prices

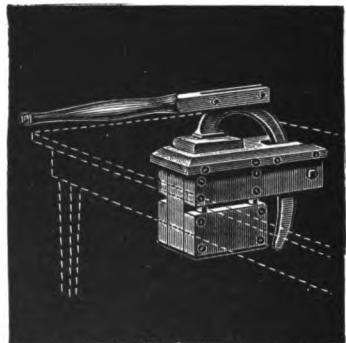
1-lb. or $\frac{1}{2}$ -lb. printer.....	\$10.00
1-lb. or $\frac{1}{2}$ -lb. printer, complete with table	15.00
2-lb. printer .....	13.00
2-lb. printer, complete with table.....	18.00

#### Extras

Handle .....	\$0.75
Plunger Blocks .....	.10
Plunger Arm .....	1.00
Sheaf Blocks .....	1.00
Initial Blocks .....	1.00
$\frac{1}{2}$ -lb. plates for blocks.....	.20
1-lb. plates for blocks.....	.25

#### Lafayette

Handle .....	\$0.75
Plunger Blocks .....	.10
Plunger Arm .....	1.00
Sheaf Blocks .....	1.00
Initial Blocks .....	1.00



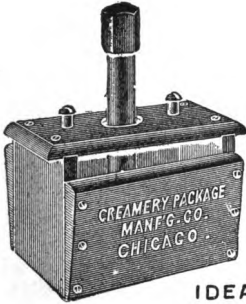
### The Reid's Automatic Iron Clad

The sides and ends are hinged independent of each other, and open and close automatically with the raising and lowering of the lever.

#### Sizes and Prices

For either pound or half-pound printer.....	\$15.00
For both pound and half-pound printer combined.....	20.00

## Ideal Family Butter Mold



IDEAL

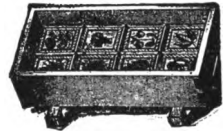
This printer makes prints the same size as the 1-lb. Up-to-Date. It is well made, durable, and where only a small amount of butter is to be printed, makes fully as satisfactory printer as one costing several times as much. The weight of the print may be quickly regulated by the two brass adjusting screws.

Family Mold, with plain block. Each.....\$0.90  
If sent by mail, add 20 cents for postage.

## Combination Butter Print

The prices below are for the regular line of prints, each cake engraved with a neat design, as shown in the cut. Prints engraved to order with simple design, initial or monogram, without extra charge. For special or elaborate designs only a moderate advance on the list. Persons ordering monograms will send design for same.

	No. of Cakes.	Cap'y Cake.	Cap'y Mold.	Price.
No. 1½ .....	2	½-lb.	1-lb.	\$2.90
No. 2½ .....	4	¼-lb.	1-lb.	4.15
No. 3 .....	4	¼-lb.	2-lb.	4.60
No. 4 .....	8	¼-lb.	2-lb.	5.40
No. 6 .....	8	½-lb.	4-lb.	5.40



## Carver Butter Printers

This cut illustrates the No. 2 Improved Mold and Stamp, which is very popular among dairymen and creamery-men in the eastern states.

Prints engraved with checked stamp without additional charge, and this style is always sent unless special designs are ordered. All engraving aside from the checked stamp is charged extra. The stamp for the 5x4½x1¼ mold is checked to divide into quarters without extra charge.

Postage on No. 2 one-pound mold, 4½x2½x2½, when sent by mail, 28c.

### Price List No. 2 Printer

1-lb., 4½x2½x2½	inches.....	\$2.00
1-lb., 4½x2¾x2¾	inches.....	2.00
1-lb., 5 x4½x1¼	inches.....	3.00
2-lb., 4½x3¾x3½	inches.....	2.25
½-lb., 4½x2½x1¼	inches.....	2.00
½-lb., 4½x2¾x1¾	inches.....	2.00

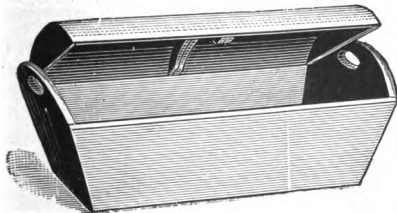
## Polished Maple Bowls

Diameter 11-inch, each.....	\$0.15
Diameter 13-inch, each.....	.20
Diameter 15-inch, each.....	.30
Diameter 17-inch, each.....	.50
Diameter 19-inch, each.....	.75
Diameter 21-inch, each.....	1.00



## Covered Butter Tray

Designed to hold the butter when taken from churn to be reworked and packed for market. Cover fits closely, excluding bad air and dust. Price includes cover.



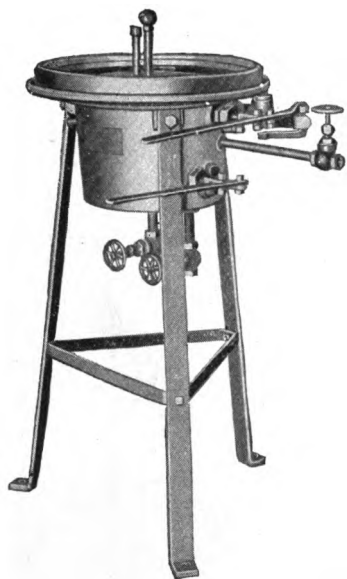
### Factory Sizes

No. 1. Holding 75 lbs.....	\$2.55
No. 2. Holding 125 lbs.....	3.40
No. 3. Holding 175 lbs.....	4.25

### Dairy Sizes

No. 4. Holding 20 lbs.....	\$1.70
No. 5. Holding 40 lbs.....	2.10
No. 6. Holding 60 lbs.....	2.50

## The Victor Paraffiner



Experiments carried out by the U. S. Department of Agriculture, and reported in a bulletin of that department show that a large per cent of the shrinkage of butter packed in tubs may be overcome by coating the inner surface of the tubs with paraffine wax; the saving in shrinkage being sufficient to pay for the cost of paraffine and the expense of applying it, several times over.

Another advantage of paraffining is that mold is almost entirely prevented. When properly applied, the wax forms an impervious coating which prevents any mold that may be in the wood from reaching the butter.

The Victor Butter Tub Paraffiner is a perfected device for applying the paraffine with a minimum of labor and expense. It consists of a jacketed paraffine reservoir fitted up for steam connections, and a jet for applying the paraffine to the tub. There is also provided a steam jet for steaming the tubs with live steam.

The operation of it is very simple. The paraffine is placed in the top of the machine in chunks, the steam is then turned into the jacket, quickly melting the paraffine, which then passes automatically to the paraffine reservoir. The tub to be paraffined is turned mouth downwards on the platform, and steamed to open the pores of the wood and to heat it up so that the paraffine will coat it evenly. Then the paraffining valve is opened, which throws the steam pressure into the paraffine reservoir, driving the melted paraffine up through the tube to the spray head, which distributes it over the surface of the tub evenly. Any surplus of paraffine drains back into the reservoir.

As the quantity of paraffine required for one tub is very small, the reservoir will contain enough paraffine to treat all the tubs used in an ordinary factory for one day.

The time required to paraffine tubs with a Victor Paraffiner is too small to notice. From 100 to 200 tubs per hour can be treated.

The cuts show the Victor Paraffiner as used for tubs. The tub platform may be removed and a special platform substituted on which boxes not less than 5 inches deep and 15 inches wide by 24½ inches long can be treated.

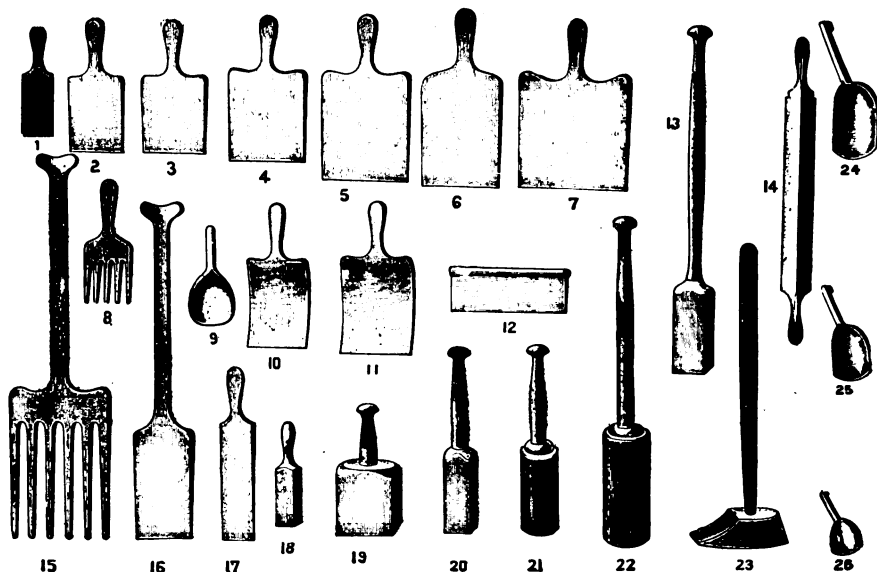
The paraffiner is constructed in the best possible manner throughout. The body of the machine is made of cast iron, fully galvanized, and supported by well braced wrought iron legs. The paraffine tube and spray head are made of brass.

A relief valve is provided so that when the steam is shut off the paraffine reservoir the pressure is immediately released. The machine is complete as shown in the cut and includes all necessary valves and fittings ready to be connected up.

### Specifications

Height over all.....	41 inches
Diameter tub platform.....	16¾ inches
Height from platform to top of flyer.....	4¾ inches
Extreme width 24 inches; approximate floor space required.....	25 x 38 inches
Shipping weight .....	275 pounds
Price for tub work only.....	\$50.00
Price for box work only.....	50.00
Price for both box and tub work.....	55.00

## Butter Ladles and Packers



All our Ladles are made from select stock carefully seasoned. Especial care is taken in the manufacture of these goods to secure the full strength of the wood. All of these goods are highly finished.

Style.	Size	Each	Per Doz.
1 Corrugated Dairy Ladle.....	2 3/4 x 9 3/4	.....	\$1.00
2 Dairy .....	5 x 12	\$0.20	2.25
3 Large Dairy .....	5 3/4 x 12	.25	2.50
4 Factory .....	7 x 13	.30	3.00
5 Medium Large Factory .....	8 x 15	.35	3.50
6 Large Factory .....	7 1/2 x 16	.40	4.00
7 Special Large Factory .....	10 x 15 1/4	.50	5.00
8 Small Butter Fork .....	4 1/2 x 11 1/4	.25	2.50
9 Dairy Spoon .....	4 x 9	.20	2.00
10 Medium Spoon .....	5 x 13	.30	3.00
11 Large Spoon .....	6 1/2 x 13	.40	4.00
12 Butter Cutter for Prints .....	10 1/2 x 4	.50	5.00
13 Large Packer, long handle.....	3 1/4 x 3 1/4 x 31	.60	7.00
14 Striker for Tubs or Printers 3-cornered.....	2 1/2 x 27 1/2	.50	5.00
15 Large Curd Fork .....	9 1/2 x 36	.75	9.00
16 Large Spade, long .....	5 1/4 x 31	.60	6.00
17 Narrow Spade, short .....	3 x 17	.50	5.00
18 Square Dairy Packer .....	1 3/4 x 1 3/4 x 10	.25	3.00
19 Large Square Packer, short handle.....	4 1/2 x 5 1/4 x 12	.60	7.00
20 Small Square Packer .....	2 1/2 x 2 1/2 x 16 1/4	.50	5.00
21 Small Round Packers .....	3 3/4 x 16 3/4	.50	5.00
22 Large Round Packer .....	4 1/4 x 29	.75	9.00
23 Large Half Round Packer.....	6 x 8 1/4 x 26 1/2	.75	9.00
24 Large New York Ladle .....	6 3/4 x 12	.60	6.00
25 Medium New York Ladle .....	5 1/2 x 10 1/2	.40	4.00
26 Small New York Ladle.....	5 1/2 x 8 1/2	.30	3.00

### Special Ladles

#### Steel Butter Spade

Wooden handle, 8-inch steel blade, nickel plated, each.....\$1.00

#### Aluminum Butter Ladle

The desirability of aluminum for butter ladles and spades has been fully demonstrated. The goods are light, easy to keep clean and bright, and will not rust or corrode under any circumstances.

Size, 3 1/2 x 9 inches, list, each.....\$0.50

#### Spade

For Butter or Lard

Size, 3 1/2 x 10 1/2 inches, list, each.....\$0.75

## Butter Tubs

### Hand Made Ash



We are the largest manufacturers of this style of package and our facilities for producing the highest grade, hand made, strictly white ash tubs are unequalled. We control the production of our tubs from cutting down the timber to loading the finished tubs on cars for shipment to the customer, and are therefore able to guarantee quality and delivery.

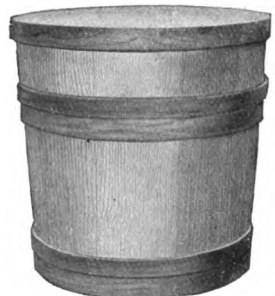
There can be no doubt that it pays to select the best package that can be procured for shipping butter to market. The appearance of the package on arrival affects the selling value, and the slight additional cost of the best tubs is returned many times over. You can depend on our tubs to carry butter safely and arrive in good shape.

Capacity	Circle for Top	Circle for Bottom	Price
20 lbs.	11 in.	8½ in.	.....
25 lbs.	11½ in.	8½ in.	.....
30 lbs.	12 in.	10 in.	.....
40 lbs.	13 in.	10½ in.	.....
60 lbs.	14 in.	11½ in.	.....
63 lbs.	15 in.	12 in.	.....

Write for Prices or see Price Current.

### "Vermont" Spruce

The Boston market, at least, prefers a Spruce Tub and gives preference to butter—other things being equal—packed in this style of packages. We have working arrangements with several spruce tub factories whereby we are able to furnish the *best spruce tubs* the market affords at reasonable prices and in quantities of one nest or a car load, and guarantee quality.



#### Sizes and Diameters for Circles.

Cap. of Tub	Diameter Top	Bottom	
5 lbs.	6 in.	5½ in.	
10 lbs.	8½ in.	6½ in.	
20 lbs.	10½ in.	8½ in.	
25 lbs.	11 in.	10 in.	Nests of 4-10, 20, 30, 50 lb.
30 lbs.	12 in.	10 in.	" 3-20, 30, 50 lb.
40 lbs.	12½ in.	10½ in.	" 3-10, 20, 30 lb.
50 lbs.	13½ in.	11 in.	" 3-25, 40, 50 lb.
60 lbs.	15 in.	12½ in.	" 2-20, 30 lb.
			" 2-10, 20 lb.

We can match up cars of Spruce Tubs and other packages.

Write for Prices or see Price Current.

## Round Spruce Butter Box

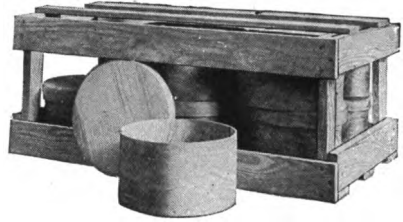
These boxes are made from Vermont spruce, with strong tops and bottoms, and are so substantial that they can be shipped singly.

An elegant and practical butter package. Try them. Made in one size only.

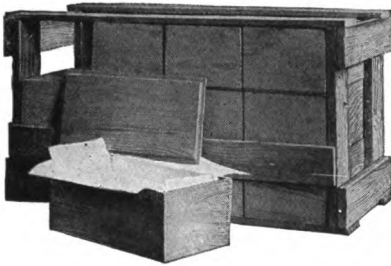
### Price

Per crate of 12 5-lb. boxes, diam. 7 in..\$.....  
Dimensions of Side Linings 4 in.x24in.....

When ordering linings state whether or not circles are wanted.



## Dumas' Improved Spruce Butter Box



This is a strong, well-made and smoothly-finished spruce box, put together with locked corners.

The sides of the package are tapered, allowing the box to be stripped from the butter easily, and the covers, being cut away at the edges, as shown in the illustration, fit perfectly.

Each box is lined with parchment paper.

### Sizes

3-lb., per crate of 24 boxes.....\$....  
5-lb., per crate of 12 boxes.....

Both the Dumas and Round Spruce Boxes are in especial favor in the Boston market. Send us a sample order.

For Prices and Discounts see Monthly Price Current.

## "Australian" Butter Boxes

### White Spruce

Beyond all question the finest package made for storage butter that will be satisfactory for foreign shipment. They are the regulation size, 12x12x12 inside measure; the sides, tops and bottoms are each of one piece. These boxes are finely finished inside and out, are cut true to gauge and nail up perfectly.

The superiority of spruce for butter packages has long been recognized, and we are offering our customers the very best box that can possibly be made for butter.

In lots less than 100.....	each, \$....
In lots of 100.....	" ....
In lots of 200 to 400.....	" ....
In lots of 500.....	" ....
In carload lots.....special	

Can also furnish White Wood and Poplar Australian Boxes at lowest market prices.

Write for Prices.

## Bail Boxes

These boxes are very popular among shippers and consumers. Butter packed in them finds a readier and often a better market, as they are very handy, as well as neat in appearance. They are put up in crates of six. They should be lined with parchment paper before filling.

### Sizes, Dimensions and Prices

	Diam.	Deep.	Per doz.
8 lbs. ....	8¼ inches	4¾ inches	\$.....
9 " ....	8¾ " "	4¾ " "	.....
10 " ....	8¾ " "	5½ " "	.....
16 " ....	10¾ " "	5¾ " "	.....

### (Sizes of Side Linings for Bail Boxes)

8 lbs. ....	5 inches	x 26 inches	8½
9 " ....	5¼ " "	x 26 " "	8½
10 " ....	6½ " "	x 26 " "	8½
16 " ....	6½ " "	x 32 " "	10½

For complete lining include two circles.



For Prices, See Our Monthly Price Current.

## The Gem Fibre Butter Package



The Neatest, Cheapest and Best small Butter Package ever made. This package is the result of years of study and experiment. It is made of waterproof Jute Board, and is lined with the very best quality of parchment, making it Clean, Tasteless and Odorless. It is constructed without seams or open joints, being made one solid piece under heavy pressure, hence it is Strong and Neat. Owing to the material used it is Light. It has more desirable features than any package on the market. These packages are put up in small crates for carrying butter to distant markets or in bulk crates for local trade.

Prices are F. O. B., Factory, at Detroit, Mich.

Per crate.			Per crate.		
1-lb. small crates, 48 boxes.....	\$1.40		6-lb. small crates, 8 boxes.....	\$0.75	
2-lb. " " 24 " .....	1.00		8-lb. " " 6 " .....	.75	
3-lb. " " 16 " .....	.80		10-lb. " " 6 " .....	.75	
4-lb. " " 12 " .....	.75		15-lb. " " 4 " .....	.75	
5-lb. " " 12 " .....	.75		20-lb. " " 3 " .....	.75	

### Bulk Crates

For those desiring boxes in bulk we have devised "Bulk Crates." These are of uniform sizes, and hold a specific number of boxes in each size. Boxes can be shipped hereafter only in small crates or bulk crates.

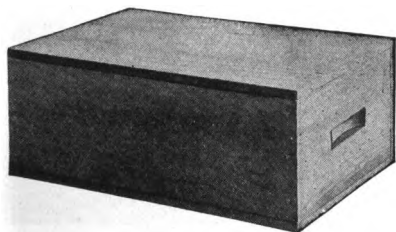
The contents and prices of Bulk Crates are as follows:

Per crate.			Per crate.		
1-lb. bulk crate, 225 boxes.....	\$5.65		6-lb. bulk crate, 105 boxes.....	\$6.30	
2-lb. " " 270 " .....	8.80		8-lb. " " 64 " .....	5.15	
3-lb. " " 162 " .....	6.50		10-lb. " " 48 " .....	4.80	
4-lb. " " 105 " .....	4.75		15-lb. " " 40 " .....	5.40	
5-lb. " " 105 " .....	5.25		20-lb. " " 40 " .....	6.00	

Labels for boxes printed in 1000 lots and over at ¼-cent each. Printing always delays shipment. Parchment circles to cover tops of each package furnished.



## Butter Print Boxes



These boxes are made from poplar, surfaced both sides and very neatly finished. The ends are made with hand hole as shown in cut. We furnish these boxes in the K. D. only. The freight charges are much less shipped this way, and it costs but a trifle to put them together. They should be lined with parchment paper before using. You can have your own name and brand printed on boxes at small expense. About six weeks are required to execute an order for printed boxes.

### Sizes

	Each.		Each.
5 lbs., 13 x 5 x 2 $\frac{3}{4}$ in.....	\$.....	40 lbs., 13 x 10 $\frac{1}{2}$ x 9 $\frac{1}{2}$ in.....	\$.....
10 lbs., 13 x 5 x 5 $\frac{1}{2}$ in.....	.....	50 lbs., 13 x 13 x 9 $\frac{1}{2}$ in.....	.....
20 lbs., 13 x 10 x 5 $\frac{1}{2}$ in.....	.....	50 lbs., 13 $\frac{1}{4}$ x 13 $\frac{1}{4}$ x 10 in. carton .....	.....
30 lbs., 13 x 8 x 9 $\frac{1}{2}$ in.....	.....	54 lbs., 23 $\frac{1}{4}$ x 14 $\frac{1}{2}$ x 5 $\frac{1}{2}$ in. flat....	.....
30 lbs., 14 $\frac{1}{2}$ x 13 x 5 $\frac{1}{2}$ in. flat....	.....		

## Improved Butter Shipping Boxes

These boxes are made of seasoned lumber, iron-bound at the edges and capped at the corners, as shown in the engraving. Detachable hinges are used for the lid, which cannot be strained or easily broken.

The trays for the butter are let down into the box, one upon another, and may be put in or lifted out with the butter in them. A movable ice box is placed in the center; when this is not used, a strip, provided for the purpose, may be placed at the bottom of each tray to fill up the space.

### Price List of Wood Tray Boxes

Capacity 12 lbs... \$3.50	Capacity 56 lbs... \$5.00
Capacity 20 lbs... 3.75	Capacity 80 lbs... 5.50
Capacity 30 lbs... 4.25	Capacity 96 lbs... 6.00
Capacity 40 lbs... 4.75	Capacity 120 lbs.. 6.50

Can furnish Tin Tray Boxes on special orders.



## Curtis Refrigerator Butter Carrier

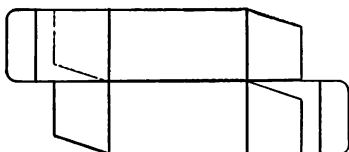


No ice is used with this box. It is made with **two dead air spaces** around the box, doing away with the necessity for a can of ice and water in the center of the box. The butter being thoroughly protected, **no ice is needed** and the shipping box need not be so large and cumbersome. Boxes are substantially made; trays are dovetailed together. Inside of box is made from wood that is free from odor and will not taint the butter. Chest handles are provided on the ends. Tin trays will be furnished at small expense.

Capacities given are for standard one-pound prints. Prices are F. O. B. factory, Southern Wisconsin.

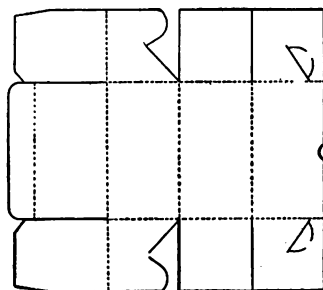
Size.	Cap'y.	Each.
No. 0	15 lbs.....	\$3.50
No. 00	20 lbs.....	4.50
No. 1	30 lbs.....	5.50
No. 2	45 lbs.....	6.50
No. 3	60 lbs.....	7.25
No. 4	80 lbs.....	8.25

## Butter Cartons



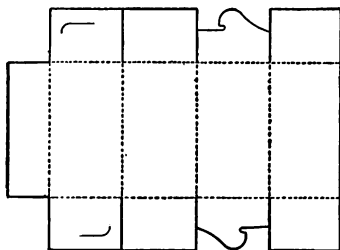
### Glued Tuck End Style

This carton is handy to set up around the butter, as it is only necessary to tuck the ends in. It is shipped flat as shown in the diagram. It can be printed on all four sides and also on the ends. It is a handy package in which to keep the print until it is all used, which fact, together with its handsome appearance, makes it a favorite. Paraffined on outside only. Samples and prices sent upon request stating quantity wanted.



### Trunk Style

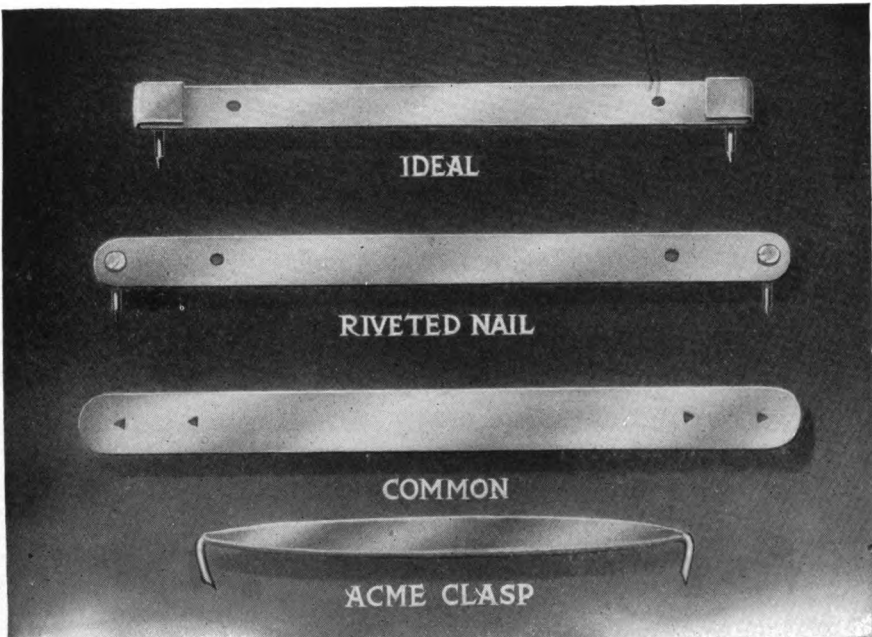
This carton is quickly set up and retains its set-up shape until the contents are consumed. The cover raises up as shown in the illustration. Can be printed on four sides, but not on the ends. Paraffined both sides of sheet. Samples and prices will be sent promptly upon request.



### Lock End Style

The lock end carton is the lowest in price and is very largely used. It is not so handy to get the butter out of as the other two styles. Can be printed on all four sides, but not on the ends. Paraffined on both sides of sheet. Samples and prices will be sent on request.

## Tub Fasteners



The above illustration shows our regular styles of butter tub fasteners. Samples and prices of any style will be sent upon application.

### The Ideal

We recommend this style of fastener for the safe transportation and preservation of the contents of the package. It is quickly applied and can be easily withdrawn to examine butter and can be re-used. The tin is turned over the nail heads making it impossible for nails to drop out. Packed 1,000 in a package. Price per 1,000 \$....

### Riveted Nail

Made of heavy tin. The nails are riveted to the tin in such a way that they cannot drop out.

1,000 lots, per M.....\$.... | 10,000 lots, per M.....\$....  
 5,000 lots, per M.....\$....

### Common

A good serviceable fastener. The nail holes are punched triangular in shape and grip the nails firmly so that when withdrawn the fastener can be re-used without providing new nails. Packed 1,000 in a package.

1,000 lots, per M.....\$.... | 10,000 lots, per M.....\$....

### Acme Clasp

Made in two sizes. No. 9 is 2½ inches long, No. 10 is 2¾ inches.

	No. to Lb.	Per Lb. Coppered	Per Lb. Galvanized	Per Lb. Solid Tinned
No. 9.....	150	\$.....	\$.....	\$.....
No. 10.....	145	.....	.....	.....

### Nails and Tacks

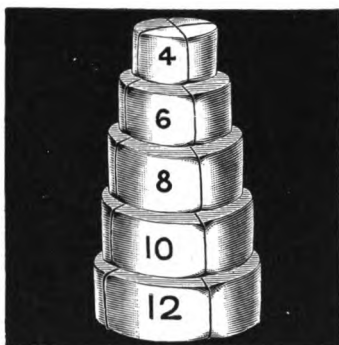
Used with common tub tins and with Ideal and Riveted Nail Fasteners where additional nails are desired.

¾ in. Wire Nails, per lb.....\$.... | 10 oz. Swede Tacks, per lb.....\$....

**Write for Prices or See Monthly Price Current**

# Bleached Cloth Circles and Squares

"Excelsior" Brand



They are made from the heaviest of bleached cloth used for this purpose. We guarantee perfect Circles, full count and full weight. We are the largest manufacturers of these goods in the United States, our machines having a capacity of 6,000 yards of cloth per day. We have no hesitancy in claiming superiority for the Excelsior brand of Cloth Circles and Squares. Can fill orders promptly for odd sizes.

## List Prices Cloth Circles

Sizes and prices per M.

In.	Price.	In.	Price.	In.	Price.	In.	Price.
4	\$ 0.70	7½	\$ 2.50	11	\$ 4.75	14½	\$ 7.85
4½	.85	8	2.75	11½	5.25	15	8.00
5	1.10	8½	3.00	12	5.80	15½	8.50
5½	1.30	9	3.35	12½	6.00	16	9.00
6	1.45	9½	3.75	13	6.50	16½	9.50
6½	1.65	10	4.20	13½	7.00	17	10.00
7	2.00	10½	4.50	14	7.50		

## List Prices Cloth Squares

Sizes and prices per M.

Size.	Price.	Size.	Price.	Size.	Price.
6x6	\$1.55	9x9	\$3.45	12x12	\$6.00
7x7	2.10	10x10	4.30	10x15	6.10
8x8	2.85	8x11	3.55	12x15	6.50
8x9	3.25	9x12	4.35		

Special sizes cut to order.

## Burlaps

If you want your packages to arrive at destination in nice shape, use burlaps on them. They should always be used where butter is to be shipped long distances or put in storage. Prices quoted on application.

### Sizes

10-lb. tub size.....Each, \$.....	50 to 60-lb. tub size.....Each, \$.....
20 to 25-lb. tub size.....Each, .....	70-lb tub size.....Each, .....
30 to 40-lb. tub size.....Each, .....	Australian Butter Box size..Ea., .....

# Parchment Paper

## Pioneer Brand Genuine Vegetable. The Perfect Wrapper for Butter, Meats, Ice Cream and Food Products.

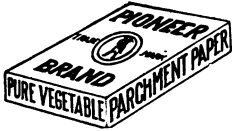
Pioneer Brand Parchment Paper is remarkable for its uniformity, toughness, freedom from odors and superiority in all respects over any other wrapper for food products. It is stronger wet than dry and does not pull apart when wrapped around a moist article. Being itself odorless, it will not impart any flavor to butter, ice cream, meat or other articles. We furnish the genuine Pioneer Brand in all standard sizes, shapes and weights and either plain, or printed in one or two colors.

### Weights of Stock

Parchment Paper is referred to as being 25, 30 or 40 lb. weight. The basis is the weight of a ream (500 sheets) of 24x36-inch flat parchment paper. It is always advantageous to use the heavier weights, as they protect the butter better and prevent shrinkage.

### Parchment Butter Print Wraps

#### Plain and Printed



We make a specialty of 8x11-inch parchment squares for wrapping print butter. Our wrappers are shipped in boxes or cartons, each holding 1,000 sheets. We furnish wrappers in any quantity from 1,000 up in 25, 30 or 40 lb. stock, plain or printed in one or two colors in best quality of inks made especially for this purpose and which are waterproof and brine proof.

We call special attention to the advantages of using the heavier weights of wrappers on account of the better protection of the butter.

### Special Designs

Once you have a special design and plate for printing parchment wrappers, it costs no more than for printing from type and the effect is much better. We make special designs to order embodying your ideas or we will submit suggestions for your approval. The cost of a special design depends upon how elaborate a drawing is required, but, as stated, the expense is incurred on the first order only, and the gain in attractiveness well repays the nominal cost.

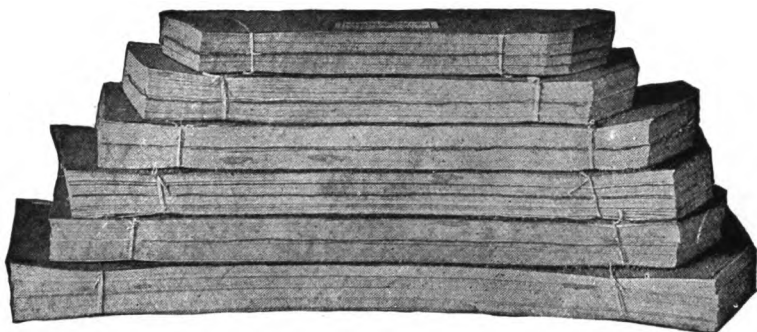
### Write for Prices of Special Designs

### Complete Parchment Linings for Print Boxes and Side Linings for Round Butter Packages

Size.	List per M.	Size.	List per M.	Size.	List per M.
2 x12	in. .... \$ 0.40	8 x13	in. .... \$ 1.60	12 x12	in. .... \$ 2.00
2 3/4 x14	in. .... .60	8 x15 1/2	in. .... 1.90	12 x14	in. .... 2.15
3 3/4 x18	in. .... 1.05	8 x30	in. .... 3.75	12 x15	in. .... 2.35
4 x24	in. .... 1.50	8 x46	in. .... 5.65	12 x16	in. .... 2.95
4 3/4 x22	in. .... 1.50	9 x 9	in. .... 1.30	12 x18	in. .... 3.30
5 x25	in. .... 1.95	9 x12	in. .... 1.50	12 x31	in. .... 5.75
5 x26	in. .... 2.00	9 x13	in. .... 1.70	12 x36	in. .... 6.60
5 x40	in. .... 3.05	9 x36	in. .... 5.00	12 1/2 x20	in. .... 3.85
5 1/4 x26	in. .... 2.10	9 x38	in. .... 5.25	13 x13	in. .... 2.60
5 1/2 x40	in. .... 3.40	9 x46	in. .... 6.35	13 x15	in. .... 3.00
6 x 6	in. .... .50	9 1/2 x23	in. .... 3.35	13 x40	in. .... 8.50
6 x 9	in. .... .90	9 1/2 x27	in. .... 3.90	13 x46	in. .... 9.20
6 x11	in. .... 1.00	10 x10	in. .... 1.40	13 x48	in. .... 9.60
6 x26 1/2	in. .... 2.45	10 x12	in. .... 1.85	13 1/2 x45	in. .... 9.30
6 x30	in. .... 2.80	10 x13 1/2	in. .... 2.10	13 1/2 x52	in. .... 10.80
6 x40	in. .... 3.70	10 x15	in. .... 2.25	13 3/4 x46	in. .... 9.70
6 1/2 x13	in. .... 1.30	10 x20	in. .... 3.25	14 x50	in. .... 10.75
6 1/2 x26	in. .... 2.60	10 x22	in. .... 3.40	14 1/2 x24	in. .... 5.35
6 1/2 x32	in. .... 3.20	10 x24	in. .... 3.70	15 x18	in. .... 3.90
7 x 7	in. .... .85	10 x28	in. .... 4.30	15 x24	in. .... 5.50
7 1/2 x29	in. .... 3.35	11 x13	in. .... 2.20	15 1/2 x24	in. .... 5.75
7 3/4 x45	in. .... 5.35	11 x16	in. .... 2.75	16 x40	in. .... 9.80
8 x 8	in. .... 1.00	11 x46	in. .... 6.35	16 x48	in. .... 11.80
8 x 9	in. .... 1.15	11 x52	in. .... 8.80		
8 x11	in. .... 1.35				

Write for Prices not Given and Discounts or see Price Current.

# Parchment Tub Liners



Pioneer Brand Pure Parchment Paper Linings aid in protecting the butter from mold. They help to retain quality and weight, prevent shrinkage, prevent woody taste, allow easy and perfect stripping.

Butter tubs should be treated the usual way, as if no Parchment Paper were to be used. We recommend that tubs be steamed and both the tub and paper be soaked in strong brine.

## Side Liners.

Liner No.	Capacity of Tub	Depth of Paper in Tub	Price Per 1000
10	10 lbs.	8 in.	\$ 5.00
21	20 lbs.	10½ in.	8.00
208	30 lbs.	12 in.	11.00
212	40 lbs.	12¾ in.	11.85
214	50 lbs.	14½ in.	14.00
225	60 lbs.	14½ in.	15.00
260	63 lbs.	15½ in.	17.50
2254	60 lbs.	14½ in.	20.00
2604	63 lbs.	15½ in.	23.35

The above Nos. 2254 and 2604 cut from 40-lb. Parchment. Nos. 10 to 260 cut from 30-lb. Parchment.

## Circle Sizes and Prices

Ash Tub				Spruce Tub.			
Bottom Paper	Price per M	Top Cloth	Price per M	Bottom Paper	Price per M	Top Cloth	Price per M
8½	\$1.50	11	\$4.75	6½	\$0.90	8½	\$3.00
10	2.10	12	5.80	8½	1.50	10½	4.50
10½	2.30	13	6.50	10	2.10	12	5.80
11½	2.75	14	7.50	10½	2.30	12½	6.00
12	3.00	15	8.00	11	2.55	13½	7.00
11½	4.13	14	7.50	12	3.30	15	8.00
12	4.49	15	8.00				

When complete Liners are ordered we send Parchment Circle for bottom and cloth for top unless otherwise ordered. Parchment Circles are 30-lb. stock, except last two items, which are 40-lb.

## Parchment Circles

Per 1,000 Circles.

30 lb. 40 lb.				30 lb. 40 lb.				30 lb. 40 lb.			
2 in.	diam.	\$0.20	\$0.27	8½ in.	diam.	\$1.50	\$2.32	15 in.	diam.	\$4.70	\$6.70
2½	"	.25	.33	9	"	1.70	2.59	15½	"	5.00	7.34
3	"	.30	.40	9½	"	1.90	2.87	16	"	5.35	7.82
3½	"	.40	.53	10	"	2.10	3.16	16½	"	5.70	8.29
4	"	.45	.67	10½	"	2.30	3.47	17	"	6.00	8.79
4½	"	.50	.72	11	"	2.55	3.80	17½	"	6.40	9.29
5	"	.55	.87	11½	"	2.75	4.13	18	"	6.75	9.84
5½	"	.65	1.03	12	"	3.00	4.49	18½	"	7.15	10.36
6	"	.75	1.21	12½	"	3.30	4.85	19	"	7.50	10.88
6½	"	.90	1.40	13	"	3.55	5.23	19½	"	7.90	11.48
7	"	1.00	1.61	13½	"	3.80	5.62	20	"	8.40	12.00
7½	"	1.20	1.82	14	"	4.10	6.04	22	"	10.00	.....
8	"	1.35	2.07	14½	"	4.40	6.46				

Sold in packages of 500 and 1,000.

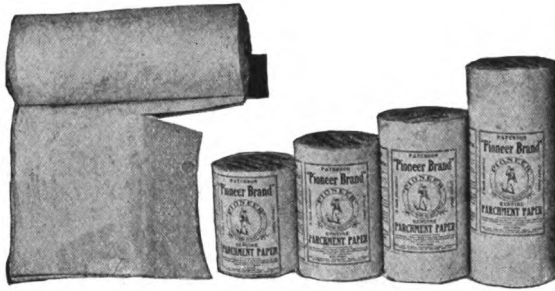
## Printing on Circles—Net Prices

Quantity	Up to 7 in.		7½ to 12 in.		12½ in. and over	
	Per M		Per M		Per M	
5,000	\$0.50		\$0.75		\$1.00	
10,000	.45		.70		.90	
20,000	.40		.65		.85	
50,000	.35		.60		.85	
100,000	.25		.50		.75	

Above prices are for printing in one color; any matter set up in type with suitable border; no extra charge for plates except where we are requested to make special design or cut, which will be charged out at cost with the first order.

**Special prices on larger quantities and for two colors.**

# Roll Parchment



## Standard Rolls

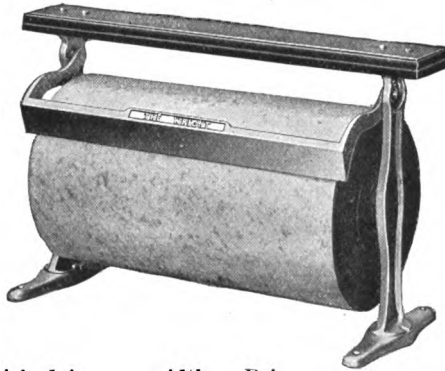
Nine-inch diameter, packed in crates of about 350 pounds to each size.

The Pioneer Boss Parchment Rolls are made from 30-pound paper, nine-inch diameter, weighing about two pounds to the running inch, i. e., a 12-inch roll will weigh about 24 pounds. Very convenient for lining print butter boxes. More economical than flat parchment and cleaner.

Widths in stock, as follows: 6 in., 9 in., 12 in., 15 in., 18 in., 24 in., 27 in., 30 in., 36 in. Special widths made to order.

Price, per pound.....

## Roll Paper Holder and Cutter



Nickel plated, furnished in any width. Price .....\$1.25

## Parchment Barrel Liners

(50-lb. stock.)

Lot No. 1—1 sheet 32 x 77 and 2 20-in. circles, per M sets.....\$50.00 Net

Lot No. 2—1 sheet 28 x 72 and 2 18-in. circles, per M sets..... 50.00 Net

Lot No. 3—1 sheet 28 x 60 and 2 16-in. circles, per M sets..... 50.00 Net

**Australian Box Liners**, 50-lb. stock, per M..... 13.50

## Flat Parchment Paper

25, 30, 40, 50 and 60-lb. basis.

36x40....per lb. \$. .... 24x36....per lb. \$. .... 36x60....per lb. \$. ....

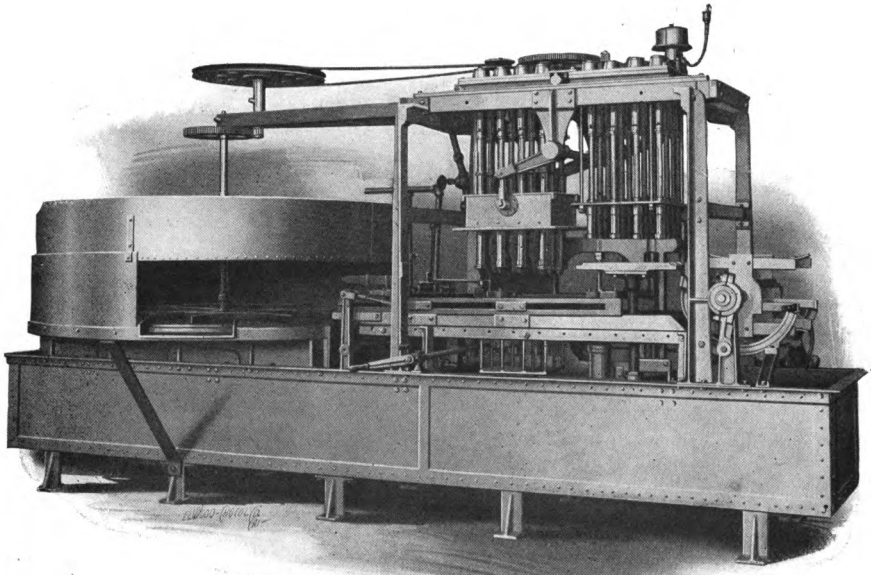
Special sizes furnished when desired.

## Waxed Paper

9x12, 400 sheets in package.....per pkg. \$. ....

**See our Price Current for Discounts and Prices.**

## Fort Atkinson Automatic Brush Bottle Washer



Style A

This is the largest and most efficient bottle washing machine we build. It operates on the principle of washing each and every bottle with brushes, both inside and out. It is especially designed for use in large bottling plants, where thousands of bottles are to be washed every day and the utmost in cleanliness is insisted upon.

*Operation*—In operation the cases are placed on the horizontal soaking wheel, at the left in the picture, the bottles being right side up, and in this position they are continually sprayed with a soaking solution. They pass around the wheel until they reach the track leading to the brushing heads. At this point the case forwarder engages the case and advances it to a position under the outside brushing head, where the case remains stationary and elevator pins raise the bottles to a position above the dowel wires of the case; simultaneously the outside brushes descend, so that each bottle is thoroughly brushed.

The next movement of the case advances it to the inside brushing heads. Here the case and bottles are elevated to a set of centrifugal, expanding brushes running at a speed of 1500 R. P. M. This thoroughly brushes the inside of the bottles. The brushes and bottles are constantly flooded with a soaking solution during this operation.



## Fort Atkinson Automatic Brush Bottle Washer

### Style A—Cont.

The case then advances to the inverter, where it is turned upside down and drained before passing into the sterilizing and rinsing compartments. (This part of the equipment is not shown in cut.)

*Description*—The machine is entirely automatic, the operator having perfect control over the movements by a hand lever. The mechanism for forwarding and elevating cases consists of two hydraulic cylinders—one for forwarding and one for elevating. It will readily be seen that by eliminating all gears, cams, etc., in the movement of the cases the danger of breakage is reduced to the minimum; the hydraulic cylinders effecting a long, slow movement, and being possessed of an elasticity which is necessary to secure smoothness of operation in a machine of this type. The brushes are operated by belt power.

*Pump*—Triplex pattern, suitable for a pressure up to 100 lbs. per square inch. Has heavy gearing, ratio 5 to 1. Will deliver 185 gallons water per minute. Pumps are furnished complete with the piping, check and relief valves as necessary for connection close to washer.

Complete machines include the soaker and washer, as shown in cut, pump as specified and rinsing and sterilizing unit.

Style "A."	Complete for quart bottles.	} Prices on application.
Style "A."	Complete for pint bottles.	

## Fort Atkinson Automatic Brush Bottle Washer

### Style B

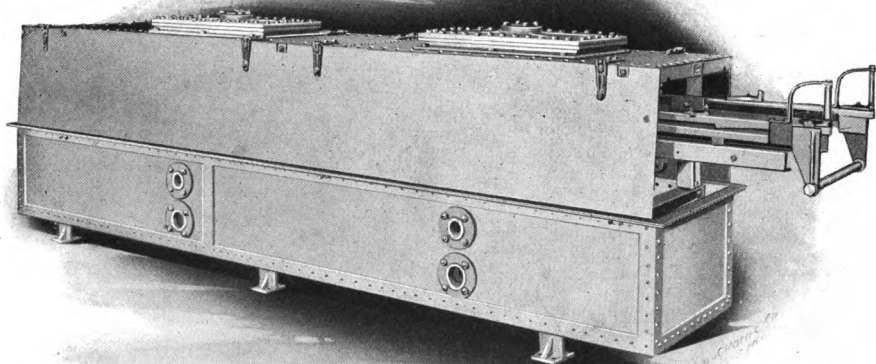
This is a combination machine, so built that pint and quart bottles can be washed on the same machine, the *brushes washing the inside only*. It is identical in general appearance with the Style A, except that the outside brushes are left off and a pint brushing head put in their place.

For large milk plants this is a very economical machine, as it can be used for washing both quart and pint bottles in cases. It is so built that should a purchaser desire to equip with outside brushes later on, he can do so.

Furnished complete with pump, piping, check and relief valves. *Prices on application.*

# Paragon Bottle Washer

Style "C"—Jet Type



This washer is of the hydraulic or jet type, depending upon water pressure to clean the bottles, both inside and out. It is fitted with hydraulic case forwarding cylinders. The view shows the pump side of the machine without the pumps attached. We manufacture the Paragon in a number of different sizes, and with centrifugal steam and triplex pumps, as follows:

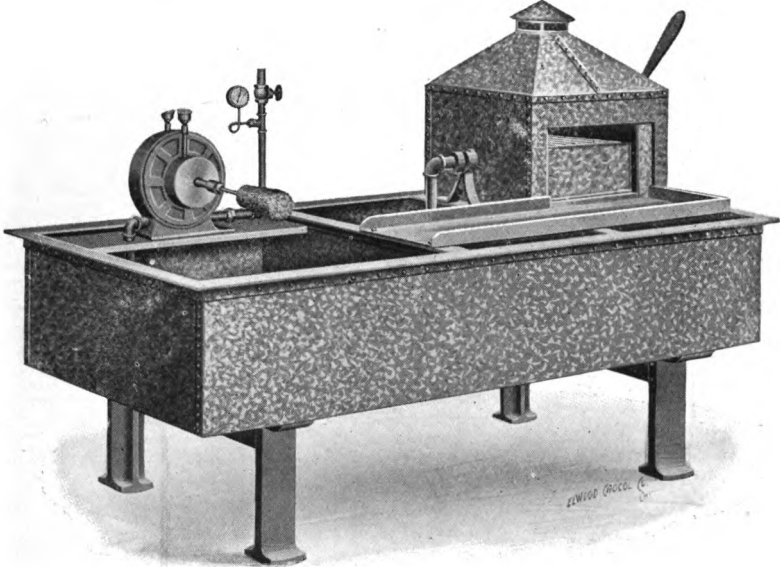
- No. 1. Fitted with centrifugal pump, hand feed, for a dairy of 500 to 3,000 bottles.
- No. 2. Fitted with centrifugal pump, power feed, for a dairy of 1,000 to 3,000 bottles.
- No. 3. Fitted with centrifugal pump, power feed, for a dairy of 3,000 to 5,000 bottles.
- No. 4. Fitted with centrifugal pump, power feed, for a dairy of 6,000 to 12,000 bottles.
- No. 5. Fitted with centrifugal pump, power feed, for a dairy of 10,000 to 25,000 bottles.
- No. 6. Fitted with centrifugal pump, power feed, for a dairy of 20,000 to 50,000 bottles.
- No. 7. Fitted with centrifugal pump, power feed, for a dairy of 30,000 to 75,000 bottles.
- No. 8. Fitted with steam or triplex belted pump, hand feed, for a dairy of 500 to 3,000 bottles.
- No. 9. Fitted with steam or triplex belted pump, power feed, for a dairy of 1,000 to 3,000 bottles.
- No. 10. Fitted with steam or triplex belted pump, power feed, for a dairy of 4,000 to 8,000 bottles.
- No. 11. Fitted with steam or triplex belted pump, power feed, for a dairy of 6,000 to 12,000 bottles.
- No. 12. Fitted with steam or triplex belted pump, power feed, for a dairy of 10,000 to 25,000 bottles.
- No. 13. Fitted with steam or triplex belted pump, power feed, for a dairy of 20,000 to 50,000 bottles.
- No. 14. Fitted with steam or triplex belted pump, power feed, for a dairy of 40,000 to 100,000 bottles.

**Complete Specifications and Prices on Application.**

# Fort Atkinson Bottle Washer

## Style D

### Hand Washer With High Pressure Rinser and Sterilizer



This machine is especially designed for medium sized milk plants. It is shown with 20th Century Turbine Washer, but can be fitted with any of our several styles of turbine or belted washers. It is made for 3 x 4, 4 x 5 and 2 x 6 cases.

**Operation.** The bottles in cases are first placed in the soaking and washing tank in a hot solution of "Wyandotte." An empty case is then placed on the drain shelf at the right. The operator then takes the bottles from the case in washing tank, washes them on the brush washer and places them in the case on drain shelf. When the latter case is filled a retainer is put on and it is then shoved into the rinser and sterilizer, the bottles being right side up. The operator then pulls the lever at the end, which inverts the case so that the bottles are upside down and at the same time rinses them with hot water under boiler pressure. The rinsing is automatically followed by jets of steam. The operator in the meantime is filling another case which, when filled, is transferred to the sterilizer, forcing the first case out on the other side, where it slides down an inclined track, or it may be carried away and stacked. If desired, the drain shelf may be removed and the washed bottles rinsed in clear, cool water in the second compartment. With this plan of operation two men are needed to work the machine to full capacity.

#### Price

Style D machine, with 20th Century Turbine Washer, as shown in cut.....\$250.00

If some other style of washer is preferred, deduct \$25.00 and add regular price of washer wanted.

## Style E

Designed for small dairies. Similar to the Style D, except that the high pressure water jet and automatic inverter are not included. Cases and bottles are first put into soaking tank; the operator brushes the bottles and places them in clean, hot water in second compartment. They are then put into case with retainer, then inverted and placed in sterilizer, which has a hand-lever steam valve. Made for 3 x 4, 4 x 5 and 2 x 6 cases.

#### Price

Style E. Machine with 20th Century Turbine Washer.....\$125.00

Style E. Machine with Acme Single Brush Belt Washer..... 110.00

## The Ideal Bottle Washing Outfits

The outfit as shown includes an Ideal Turbine Bottle Washer fastened to a strong shelf covered with galvanized iron. The tank is very strongly made of one-inch cypress finished in natural wood and has heavy iron legs. It is lined throughout with heavy galvanized iron, which extends over the edge and down the outside to a distance of three inches and is securely nailed. This does away with all danger of tearing the clothing or injuring the hands on sharp edges. The corners are also bound with strips of heavy galvanized iron.

As fast as washed the bottles are rinsed in the rinsing tank with clean water and then placed mouth downward in the sprayer rack. When this rack is full a slight pressure on the foot lever opens the valve and sprays the inside of the entire twenty-four bottles at one operation. The rack full of bottles is then removed and another rack put in its place. It is designed to use cold water only in spraying the bottles, as a clearer effect is produced than when warm water is used.

It is furnished complete with all necessary pipe, fittings, valves, steam gauges, noiseless water heater, ready to be connected to steam and water pipes. But one connection to each is required.

These washing outfits are also made double, i. e., the bottle washer has brushes on both sides and the tanks are made double, making a complete double washing outfit.

### Over All Dimensions of Single Outfits

Length over all, including sprayer valve, 69 inches.

Width over all, including piping in rear, 34½ inches.

Height over all, including legs, also valves and fittings on top, 56 inches.

### Prices

Single Brush Outfit, with galvanized washer.....	\$115.00
Double Brush Outfit, with galvanized washer.....	165.00

### "Ideal" Foot Power Washer

It is so constructed that it can be fastened to the wall, having the brush extend over the vat or tub, or it can be changed and fastened directly upon either front or back of vat, letting the brush extend over same. A small rubber wheel fastened on the brush runs in the large grooved wheel. As the rubber binds when the pressure is placed upon the brush, there is no slipping or noise. The attachment for the brush is simple, and is made to fit any ordinary wood handle jar brush.

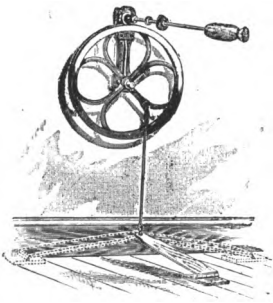
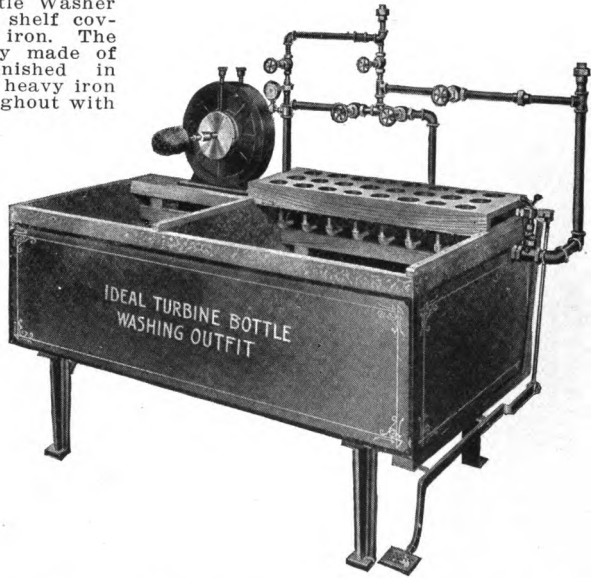
Can also be fitted with a pulley for belt power use if desired; size of pulley five inches in diameter, 1½ inch face, and should speed at 100 revolutions per minute.

### Price

Complete with brush and one pedal, either short (2¼ feet) or long (3½ feet).....	each, \$6.00
With belt power attachment.....	each, 7.00

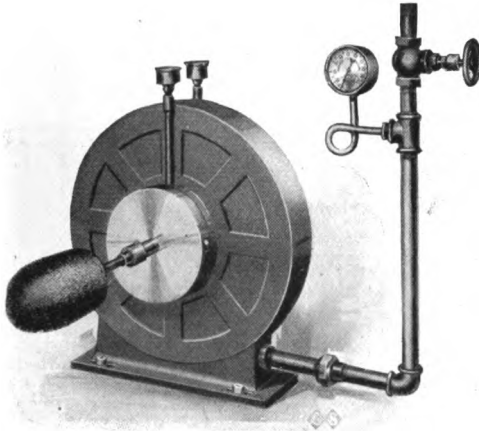
### Price of Extras

Long pedal with rod and hinge.....	each, \$0.75
Short pedal with rod and hinge.....	each, .60
Tin water guard for preventing water from getting on wheels.....	each, .75
Rubber drive rings.....	per dozen, \$1.50; each, .15



## Turbine Bottle Washers

### The "Ideal"



This bottle washer is now made with a new gearless turbine, the speed being controlled by the governor. When the speed of the turbine reaches a certain point the governor operates to prevent the speed exceeding the limits of safety. This governor is in a separate case to keep out moisture, which would have a tendency to cause the bearings to rust and cause it to act too slow. The cover to this case can be removed in a moment and the speed adjusted at any desired point.

The brush spindle is so constructed that it will hold the brush handle firmly, and when it is desired to replace worn out brushes with new ones, a few seconds' time is all that is required.

The machine is heavily galvanized and is fitted with compression grease cups, bronze gears and bearings, special steam gauge and syphon, globe valve, and all necessary pipes and couplings.

With each machine we furnish Hair Bottle Brushes.

one each of our Ideal, India Bristle, and Horse

These machines are furnished with either single or double brush, the double brush machine having brush attachments on both sides. From a large number of tests that have been made with this machine, it has been found that from 1,000 to 1,500 bottles can be washed per hour with a single brush machine, and washed well and without unusual effort.

#### Dimensions of Washer

Height over all, including grease cups, 19 inches. Width, not including steam pipe, 15 inches. Width, front to back, including brush adjusted, 20 inches.

#### Price

Single brush.....each, \$35.00  
Double brush.....each, 45.00

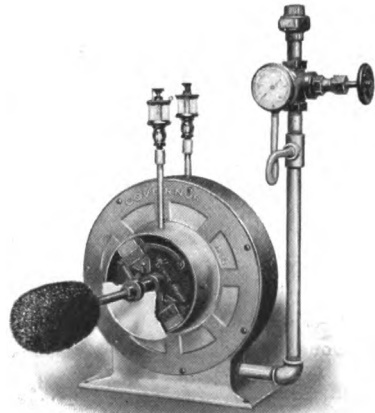
### The "20th Century"

Similar to the Ideal, illustrated above, except that it is smaller, the turbine case being 12 inches in diameter. The illustration shows the interior of the governor.

Heavily galvanized, and price includes three bottle brushes, two compression grease cups, steam gauge, valve and piping as shown in cut.

#### Price

Each .....\$25.00



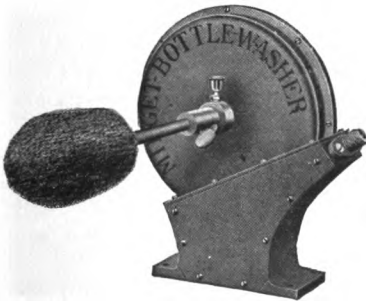
### The Midget

This is the smallest turbine washer made, being but 12 inches wide. It is a good, serviceable machine and will last for a long time.

Those desiring a low priced, serviceable machine will find that the Midget will answer every purpose. It has bronze bearings, two compression grease cups and brass steam inlet connection. Neatly painted with aluminum paint. One Ideal or India Bristle, or Horse Hair Bottle Brush furnished with each machine.

#### Price

Each .....\$15.00



## Belt Drive Bottle Washers

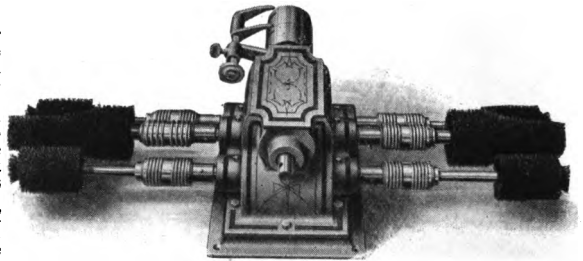
### Fort Atkinson Bottle Washer

Three-Spindle, Single or  
Double End.

This is a high-grade washer for heavy service and is made of high-grade materials and constructed in the most durable manner.

The three brushes on each end are so arranged that two bottles may be washed at one time. The smaller brushes at each side are for the insides of the bottle, and the central brush washes the outside of both bottles. An experienced operator can wash an immense number of bottles in an hour.

Special attention is directed to the construction. The frame is of heavy cast iron, galvanized. Gears are of the worm type, made of hard brass and enclosed within the case, yet easily accessible by simply lifting off the cover. Bearings are phosphor bronze, and those on the drive shaft are equipped with ring oilers, insuring perfect lubrication. Tight and loose pulleys are so arranged that belt cannot get wet. Belt shifter is furnished. Brush chucks have ball bearings, so that if brush handle swells or breaks it can easily be removed. All wearing parts are interchangeable.



#### Specifications.

Dimensions of base, 11 1/4 in. x 15 1/4 in.

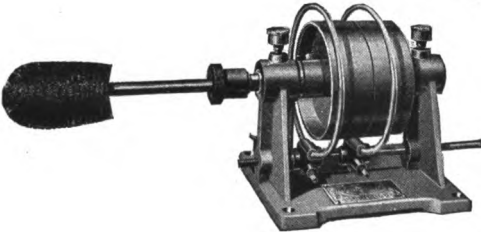
T. and L. Pulleys, 4 in. diameter, 2 in. face.

Net weight (uncrated), 130 lbs.

Price, single end washer.....\$65.00

Price, double end washer..... 85.00

### The "Mogul"



This is an exceptionally strong and durable Bottle Washer. The frame is of heavy cast iron, galvanized. The spindle is made of 1 3/16-inch cold rolled shafting. Has bronze bearings and brass compression grease cups. The brush holders are of special design. To attach brush, turn the hand screw to the left, insert brush and turn to right until tight. The brush handle is under equal pressure from all sides, is accurately centered and cannot slip. When it is desired to renew

the brush loosen the hand nut. Should the brush stick, a few light taps on the holder will loosen it.

Tight and loose pulleys 6 in. diameter by 2 in. face. This insures an even speed with a minimum amount of wear on the belt. Everything about this washer is built to last. It is especially recommended for plants desiring a strong, unbreakable, belt-driven washer. Made single and double brush.

Double brush washers are set on partition in double washing tanks.

#### Prices

Single Brush.....\$22.00 Double Brush.....\$25.00

### The "Acme"



This machine is very compact and well made. It is fitted with tight and loose pulley, size 3 inch diameter by 1 1/2 inch face, and should run at a speed of 800 revolutions per minute. The machine is fitted with compression grease cups.

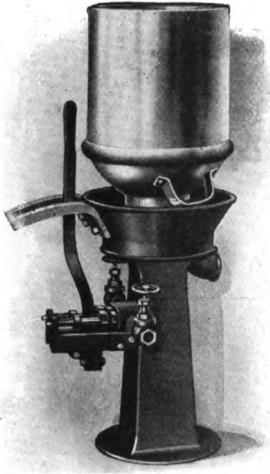
The machine is also fitted with belt shifter that can be operated easily. Taking everything into consideration, we think that for a low-priced article there is nothing on the market that can compete with this little machine.

We can furnish them only in the galvanized iron style, single or double brush, complete with brushes, same as with the Ideal Turbine Machine.

#### Prices

Single Brush.....each, \$10.00 Double Brush.....each, \$13.00

## The Victor Can Washer



This is a Combined Rinser, Washer and Sterilizer. The cans are washed by means of a spray which drives the water into the can with sufficient force to remove any matter that is not dried on. Two connections are made, one with water and one with live steam. The single lever operates both the steam and water valves. By separate movements it will deliver cold water for rinsing, hot water for washing and steam for sterilizing. It is necessary to have some pressure to the water in order to do good work.

Where cans are washed as soon as emptied and before the small quantity remaining has an opportunity to sour it will be found to do the work efficiently and will keep the cans in first-class condition. An advantage of this style of washer is that all cans are washed in clean water.

The washer is solidly constructed, having a heavy cast iron frame on which the bowl is mounted.

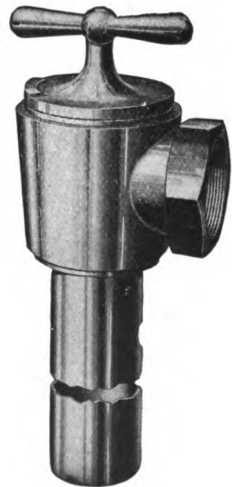
The steam and water connections are  $\frac{3}{4}$  inch; waste pipe is threaded for two inch pipe. The floor space required is 14 inches by 22 inches. Globe valves shown in cut are not included. Shipping weight, 150 pounds.

Price .....\$25 00

## Paragon Milk Can Filler

Foamless

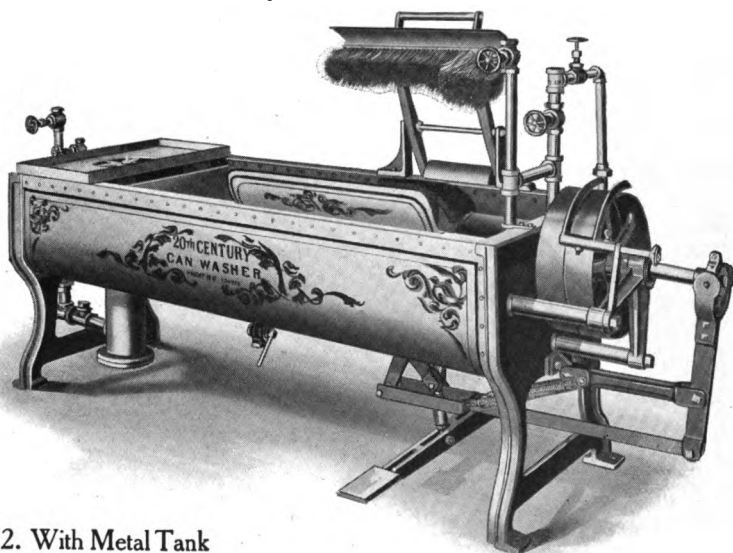
A little device of great utility wherever there are cans to be filled. It is a sanitary faucet, with a downward extension of sanitary tubing designed to reach to the bottom of the can and so do away with froth. The stop cock plug is in two parts; by lifting the handle the tube and central part of plug is drawn up so that a can may be readily slipped under the filler, the cock being closed meanwhile. The tube is then lowered into position and the handle turned, opening the valve. Pipe threads are standard. The filler is made in two sizes,  $1\frac{1}{2}$  and 2 inch. The two inch size only is carried in stock.



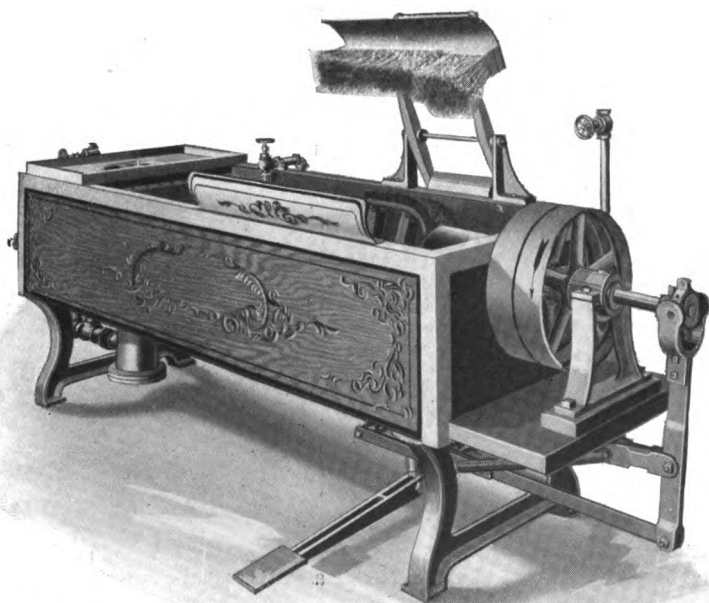
### Prices.

$1\frac{1}{2}$ "	Each \$ 9.50
2 "	Each \$12.50

## 20th Century Milk Can Washer



No. 2. With Metal Tank



No. 1. With Wood Tank

### Specifications and Prices.

Dimensions over all 9 ft. 7 in. x 3 ft. 9 in. x 6 ft. 2 in. high. Tight and loose pulleys 16 in. diameter x 3 in. face, 125 R. P. M.

No. 2. With steel tank, shipping weight, 1,400 lbs. Price.....\$200.00

No. 1. With wood tank, shipping weight, 800 lbs. Price.....150.00



# Twentieth Century Can Washer

## Description

A power can washer is needed in every creamery, cheese factory, sanitary milk plant and condensery in order to keep the patrons' or shippers' cans perfectly clean and in sanitary condition.

We have been manufacturing the 20th Century Washer for a number of years, and hundreds of them are in use and giving perfect satisfaction as well as proving very durable. Formerly these machines were made only with wood tank, but are now made with both steel and wood tanks. The tanks are also made larger than formerly, which is an advantage.

The 20th Century Washer is practically automatic and its use enables the workman to wash more cans per hour and do it easier and better. The brushes are so adjusted that they touch all parts of the can. The machines are now made so that cans having drop or loose handles can be washed without making any change in the machine, neither is it necessary to use any extra device to hold the handles while washing.

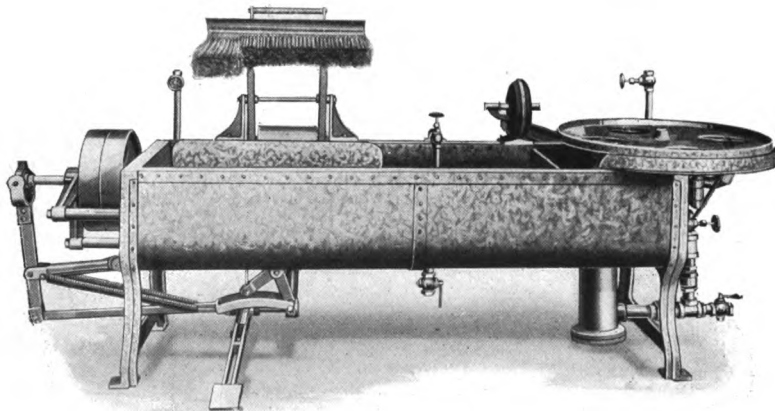
The expanding brush holders have been greatly improved and strengthened. Double links are now used instead of single links and the brushes are made to conform more truly to the shape of the cans.

The tank is now made in two compartments, one for soaking and brushing and the other for clear water rinsing. After the can is washed in the first compartment, it is inverted over the jet, where it is first rinsed with clean, hot water under boiler pressure, and this is followed by live steam, which sterilizes it. Covers as well as cans may be sterilized over this jet.

The No. 1, with wood tank, and No. 2, with metal tank, are alike so far as the general construction and operation is concerned.

Each machine is complete with one set of brushes, valves for steam and water connection, tight and loose pulleys. All brushes are made of material which we have found best adapted to service and durability and will last an indefinite length of time. Refitting the machine with new brushes when the old ones are worn is a simple matter and not expensive. **In ordering machines, state size and style of cans you desire to wash.**

# Twentieth Century Can Washer



## With Drying Attachment

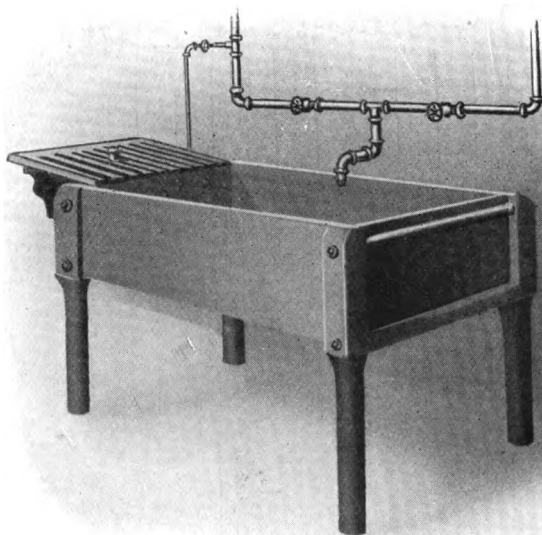
In this apparatus we have a complete can-soaking, washing, sterilizing and drying outfit built into a single machine. The machine is essentially the same as the No. 2 20th Century, with an attachment for drying the cans. The cans are first washed, then set over the nearest jet; steam is turned on, which first forces clear hot water into the cans, rinsing them perfectly; the rinsing is automatically followed by dry steam for sterilizing. The circular table is then revolved one-fourth turn to center the can over the second jet, where it is dried by air suction produced by the exhauster attached to the farther side of the tank. There are three air intakes, so that each can is being dried while three cans are being washed—about one minute ordinarily. The cans come off the machine perfectly dry.

This machine, being self-contained, compact, simple and efficient, should commend itself to all who have many cans to wash.

Dimensions and shipping weight approximately the same as the No. 2 washer.  
Price, complete .....\$250.00

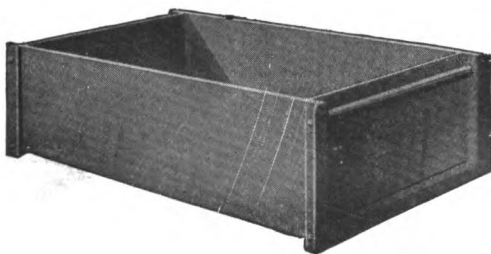
## Wash Sinks

Wood—Portable and Stationary



This illustration shows our Portable Wash Sink, with pipe connections. The steam and water pipes may be brought together in one outlet, furnishing water at any desired temperature by the simple adjustment of the valves. It will furnish boiling hot water without the noise which follows the turning of steam into cold water. The attachment on the left shows steam pipe coming up through the center of the board for steaming separator bowls, tinware, tubs, etc., after they have been used, and is a very convenient arrangement. The outlet can be made through iron pipe running through the floor into an outside drain, or in any other way desired. The sink is handsomely finished in the same style as our vats and churns, and lined with heavy galvanized iron, and will be found very convenient in a factory.

Price, not including connections.....\$ 8.00  
 Price, including connections.....\$ 11.00



### Stationary

Our Stationary Wash Sink illustrated herewith is designed as a stationary attachment to the building. It is painted inside and out with Prince's paint. Pipe connections can be made the same as in the portable wash sink.

Price .....\$6.00

## Wash Sinks

### Round Bottom



This sink is constructed for convenience and durability. The round bottom makes it possible to wash cans and other utensils with greater ease and rapidity than any other style. It has wrought iron legs and supports. Angle iron around the top. Body of heavy galvanized steel. Fitted with perfection gate. Shelf is 1 foot wide.

Size, 4 feet long, 2 feet wide, 16 inches deep .....Price \$15.00

### The Ideal

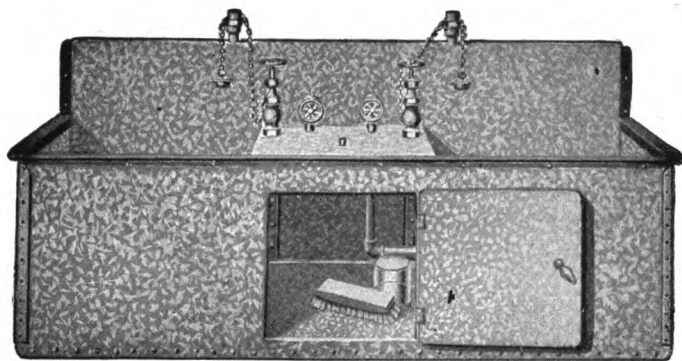


This is a strong, substantial wash sink, made of galvanized steel. It will not rot, shrink or swell. Dimensions below are inside measurements.

	Length	Width	Depth	Price
No. 1	36 in.	22 in.	12 in.	\$10.00
No. 2	48 in.	24 in.	14 in.	12.00

## Wash Sink

"Curtis" Style



As shown, this new sink is made of heavily coated galvanized sheet steel, bound on all its edges with black angle steel, making a strong, durable sink.

The small center platform divides the sink into two compartments, with hot and cold water in either or both, heated by Noiseless Water Heater. Jenkins' globe valves are used in its construction, preventing leaky pipes and valves, as is the case where cheap valves are used.

The platform used for steaming separator bowls or other articles, by the use of the steam jet shown, makes a handy closet for storage of brushes, soap or wash powders.

This sink, without legs, fastens to the wall by screws through the angle iron edge, doing away with the obstruction caused by sinks with legs or floor braces. Size 19 x 52 inches, 15 inches deep.

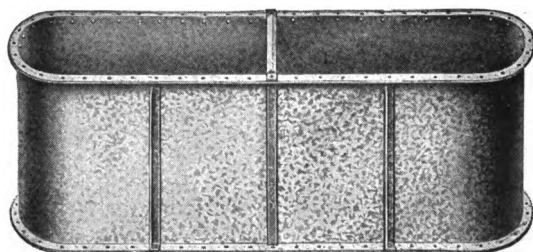
Price, with Valves and Connections, as shown, \$25.00.

## Round Wood Tanks

The prices on round wood tanks include nothing but the staves, bottom, dowel pins and iron hoops. Each tank is put together and each piece numbered before shipping. The following prices are for tanks made of two-inch pine, free from unsound knots and shake and from sap on the inner side. On request we will quote on tanks made from cypress or on sizes of pine tanks not listed below. Weights given are approximate, exact weights depending upon dryness of lumber.

Length of Stave, Feet	Diameter	Capacity in Gallons	Shipping Weight, Lbs.	Price	Length of Stave, Feet	Diameter	Capacity in Gallons	Shipping Weight, Lbs.	Price
2	4	140	165	\$ 8.00	4	8	1250	725	\$28.00
2	5	225	200	10.50	5	4	370	350	15.00
2	6	330	275	13.50	5	5	600	450	19.00
2	7	455	350	16.50	5	6	875	625	25.00
2	8	575	425	21.00	5	7	1200	675	30.00
2	10	900	650	29.00	6	5	730	475	23.00
3	6	520	350	17.50	6	6	1070	700	28.00
3	8	950	550	26.00	6	7	1465	800	34.00
4	4	300	300	12.50	6	8	1950	950	40.00
4	6	680	475	21.00	6	9	2500	1000	46.00

## Galvanized Steel Tanks



Are made of best annealed steel and heavily galvanized. All seams securely riveted between steel bars. Heavy steel angles for top rim. With ordinary care our galvanized steel tanks will last a lifetime. Cannot leak. Cannot burst by freezing. Cannot decay or rot. Always order by number. Dimensions given are over all.

### Round End Tanks

List No.	Width feet	Height feet	Length feet	Cap. Gals.	Weight Pounds	List Price
101	2	2	4	91	74	\$ 9.00
102	2	2	5	117	88	10.50
103	2	2	6	144	102	11.50
104	2	2	7	170	121	13.00
105	2	2	8	197	135	14.25
106	2	2	10	250	166	18.00
107	2	2½	8	246	151	15.00
L	2½	2	5	145	93	12.00
M	2½	2	6	178	110	13.00
N	3	2	6	213	134	15.00
108	2½	2	8	245	141	16.00
109	2½	2	10	312	177	19.00
111	3	2	8	295	156	17.00
112	3	2	10	384	185	19.50
116	4	2	8	386	169	18.50
117	4	2	10	496	203	23.00
118	4	2	12	606	243	29.00
120	4	2	16	826	320	37.50
127	5	2	16	1072	375	40.00
129	6	2	8	550	215	27.50
130	6	2	10	813	262	30.50
131	6	2	16	1218	427	45.00

### Round Tanks

List No.	Diam. feet	Height feet	Cap. Gals.	Weight Pounds	List Price
1	3	2	91	69	\$ 9.00
2	4	2	166	97	11.00
3	4	2½	215	106	12.50
4	4	3	254	115	14.00
5	4	4	338	145	16.50
6	4	5	423	168	19.00
7	4	6	508	191	22.00
8	4	8	688	220	28.00
9	5	2	262	129	14.50
10	5	2½	342	141	16.00
11	5	3	411	154	17.50
12	5	4	548	181	21.00
13	5	5	675	211	25.50
14	5	6	810	240	29.00
15	5	8	1096	285	36.00
17	6	2	384	167	18.50
18	6	2½	480	184	20.00
19	6	3	583	193	21.50
20	6	4	768	237	26.00
21	6	5	966	256	30.00
21½	7	2	486	206	21.50
22	8	2	691	245	28.00

### Square End Tanks

List No.	Width feet	Height feet	Length feet	Cap. Gals.	Weight Pounds	List Price
201	2	2	4	101	91	\$ 9.50
202	2	2	5	126	100	10.75
203	2	2	6	152	121	11.75
205	2	2	8	202	150	16.00
208	2½	2	8	262	165	17.50
211	3	2	8	318	178	18.75
212	3	2	10	397	208	22.00
216	4	2	8	424	216	23.00
217	4	2	10	530	255	25.00

All Dimensions given are measured outside over all.

All List Prices based on Tanks made from No. 20 Gauge Galvanized Sheets, with black trimmings, unless otherwise noted.

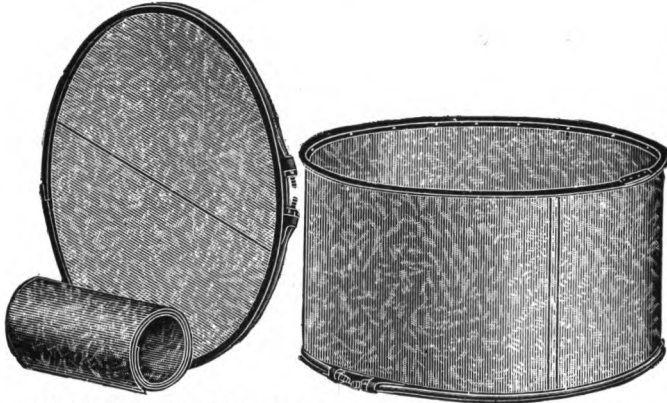
For No. 18 Gauge Tanks add 30% to No. 20 Gauge Lists.

For No. 16 Gauge Tanks add 60% to No. 20 Gauge Lists.

For All Galvanized Trimmings add 10% to Regular Lists.

Round and square end tanks furnished with channel bottoms at \$3.00 extra. Outlet connections put in at small additional charge. State definitely size and exact location of outlet desired.

## Hahn Patent Round Tank



The object of shipping tanks in the Knock-Down is the saving of freight.

The objection to a Knock - Down tank is the difficulty of soldering and riveting.

In the Hahn tank there are no rivets and no soldering.

Instead of solder and rivets it is put up with solid rod, rut rail girt and duplex clinch asbestos side joints.

Any boy can put up the tank instantly, the only tool a monkey-

Illustrating the Hahn Tank in the Knock-Down and also when set up.

wrench to screw nut of the rod hoop. No solder to melt off or crack off. More rigid and durable than a soldered tank. All round tanks, no matter the size, can be shipped in the Knock-Down, securing a decided saving in freight, and can be transported anywhere and put up anywhere in an instant. The side of tank is double locked, without use of solder, and is made water-tight and fire-proof by asbestos packing. Prices same as regular round tanks. See list on preceding page.

## Victor Skim Milk Pasteurizer

With Oil Trap for Exhaust Steam.

Enables the creameryman to return sweet pasteurized skim milk to his patrons. Prevents spread of contagious disease. Hot milk sterilizes cans and keeps them sweet. Pasteurizer is made entirely of iron; is self-contained and so constructed that no steam can pass through it without passing through milk; provided with automatic check valve to prevent steam entering milk inlet pipe. When used with exhaust steam, the oil trap prevents oil from engine cylinder getting into milk, fouling it and greasing the cans. Live steam can be used, if desired. Only 18 inches long by 6 inches diameter. Noiseless in operation. Capacity limited only by amount of milk that can be put through it. Can be cleaned in from 3 to 5 minutes.

### Prices

Without  
oil trap..\$25.00  
With oil  
trap .... 35.00  
Oil trap.. 10.00



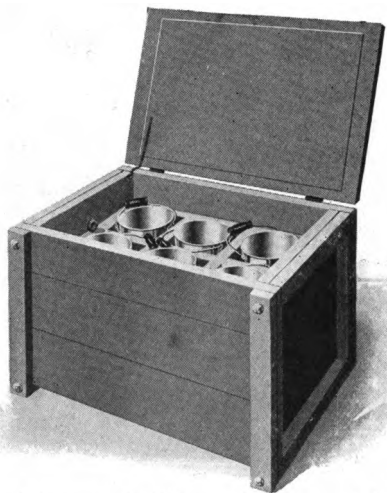
## Victor Pasteurized Skim Milk Tank

For use in connection with Victor Pasteurizer. Has a tight cover, preventing foam overflow. Made in three sizes of galvanized iron.

No. 1.	3x3x5 feet for 1 separator.....	\$30.00
No. 2.	3x4x5 feet for 2 separators.....	37.00
No. 3.	3x5x5 feet for 3 separators.....	43.00

## Special Cream Tank

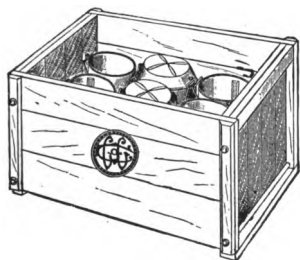
We illustrate a special tank made for holding hand separator cream until delivered to the creamery. It is made of good, sound 2-inch stock, nicely painted, has overflow pipe and fittings and rack, with space for six 18-quart shotgun cans. The tank is intended to be installed between the well and the stock watering tank in such a way that all water from the well will pass through the cream tank, keeping the cream at practically well water temperature. By separating each milking into an individual setter can and immediately placing in this tank it is quickly cooled and will keep in good condition. The cream should preferably not be mixed until ready for delivery, and at least not until thoroughly cooled. The rack has special fixtures which engage the ears of the cans and prevent them floating when only partly filled. Rack is easily removable. Without rack the tank will accommodate three 8-gallon shipping cans. We make special prices on these tanks in quantities. Shipped from Wisconsin factory.



Price, single tank for six cans, complete, no cans.....\$15.00

### Tank for Deep Setting Cans

This tank is made of good two-inch stock with ends securely clamped and fastened with rods. Covers are included, also inlet and overflow fittings. Painted inside and out, and durable and substantial in every way. Shipped from Wisconsin factory.



Tank for 4 cans.....\$13.00  
 Tank for 6 cans..... 15.00  
 Tank for 8 cans..... 20.00  
 Tank for 10 cans..... 24.00

Prices subject to discount.

### Cooley Creamer

#### Sizes, Capacity and Prices

No. 0, for 1 can, milk of 1 cow, 18 quarts.....\$18.00  
 No. 00, for 2 cans, milk of 2 to 4 cows, 36 quarts. 25.00  
 No. 1, for 3 cans, size 25x32 in., milk of 6 to 9 cows, 51 quarts ..... 28.00  
 No. 2, for 4 cans, size 28x38 in., milk of 9 to 12 cows, 68 quarts ..... 30.00  
 No. 3, for 6 cans, size 28x49 in., milk of 12 to 18 cows, 102 quarts ..... 40.00  
 No. 4, 4 to 8 cans, size 28x61 in., milk of 18 to 24 cows, 136 quarts.....\$50.00  
 No. 5, for 10 cans, size 28x72 in., milk of 24 to 30 cows, 170 quarts..... 60.00  
 No. 6, for 12 cans, size 28x84 in., milk of 30 to 36 cows, 204 quarts..... 70.00

Above prices include cans with bottom faucet and glass panel in the side of can, showing depth of cream.

Prices subject to discount.



## Depot Milk Can Vats

For Use in Depots Where Milk Is Submerged in Cans and Held to Cool



We wish to call your attention to our Perfected Milk Can Cooling Vats, for 5, 8 and 10 gallon shipping cans. We have tried to combine neatness, strength, convenience and durability, and the vat represented in the cut has these qualities. The pine vats are made of 2-in. selected common white pine, well bolted through the center of the wood and have double covers with iron handles and hinges. An iron guard in front and oak stays at each corner thoroughly protect the parts subject to wear. The cypress vats are entirely free from knots, shakes and worm holes and are more durable than pine. Either, however, is water tight. Can be fitted

with overflow. Painted to order only. All sizes made large enough for 10 gallon cans. Made to order only.

### Specifications and Prices

Capacity in Cans	Length	Width	Height	No. of Covers	PRICES	
					Pine	Cypress
6	4 ft. 6 in.	2 ft. 10 in.	2 ft. 6 in.	1	\$15.00	\$18.00
8	5 " 4 "	2 " 10 "	2 " 6 "	1	18.00	21.00
9	4 " 6 "	3 " 11 "	2 " 6 "	1	19.00	22.00
10	6 " 8 "	2 " 10 "	2 " 6 "	2	21.00	24.00
12	5 " 4 "	3 " 11 "	2 " 6 "	1	24.00	27.00
15	6 " 8 "	3 " 11 "	2 " 6 "	2	26.00	29.00
18	7 " 9 "	3 " 11 "	2 " 6 "	2	27.00	30.00
20	6 " 8 "	5 " 0 "	2 " 6 "	2	29.00	34.00
21	9 " 0 "	3 " 11 "	2 " 6 "	2	32.00	37.00
24	10 " 0 "	3 " 11 "	2 " 6 "	2	33.00	38.00
27	11 " 0 "	3 " 11 "	2 " 6 "	2	34.00	39.00
30	12 " 0 "	3 " 11 "	2 " 6 "	3	36.00	41.00
32	10 " 0 "	5 " 0 "	2 " 6 "	2	38.00	43.00
40	12 " 0 "	5 " 0 "	2 " 6 "	3	41.00	46.00

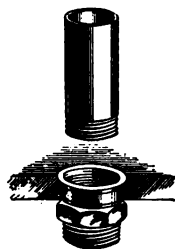
Similar vats built especially for milk jars. Write for prices, giving sizes and number of jars you want it to hold.

### Overflows

For depot milk can vats, cream cooling vats, and wood tanks of any kind where it is desired to have fresh water running through or where ice is added from time to time. The overflow herewith illustrated serves as an overflow and also for a drain outlet when it is desired to empty the tank. It consists of a nipple for the bottom of tank made of iron which is inserted in an augur hole and drawn tight against the shoulder by means of the lock nut. The nipple is threaded inside at the top to receive a short piece of pipe, which, when in place, will carry off all surplus water. The bottom inside is threaded also for a pipe to drain or sewer. The outside is of course threaded for the lock nut. Overflow is complete with nipple, lock nut and piece of galvanized pipe 18 inches long, threaded on one end. Made in 1½ and 1½-inch size.

Price, either size .....\$1.50

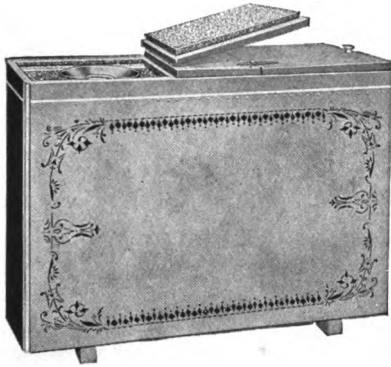
Special length overflows made to order.





## Ideal Store Vats

For Small Milk Depots, Stores and Restaurants Using Ice for Cooling



is fitted with a hinged cover, having holes cut directly over where the cans will stand, same being covered with heavy tin removable covers.

The 5-can vat is exactly like the 3-can, excepting the additional length necessary to hold 5 cans, and being slightly heavier. Ample space for ice is provided.

### Prices

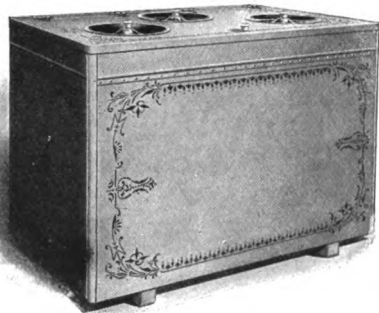
2-can vat.....	\$ 9.00
3-can vat.....	11.50
5-can vat.....	15.00

The vats are made with well-braced wooden outer frame. Inside is placed a heavy galvanized iron lining in such a manner that there is a commodious dead air space all around the lining.

In the bottom of each vat is a removable wooden resting shelf made of hardwood, well put together. This is designed to prevent cans from coming in contact and injuring the galvanized bottom.

In one corner of the vat is provided a threaded outlet to which a drain can be easily fastened. A removable wooden overflow is fitted into this outlet, so that the water will overflow at the proper height.

The 2-can vat is fitted with a divided wholly removable cover. The 3-can vat



## Milk Can Tubs

For those wishing a single can refrigerator these tubs will be found to fill all the requirements. Where dealers supply wholesale trade, restaurants, stores, etc., with bulk milk or cream, one of these tubs will give perfect satisfaction.

The can with contents is placed in tub and iced down, the whole outfit being delivered to the customers, thus relieving them of any anxiety as to the possibility of the contents becoming sour. The tubs are also very convenient for wagon use for those carrying cream, especially in warm weather.

These tubs are used extensively for shipping fancy milk and cream long distances. Ample space for ice being provided, the product always arrives in perfect condition.

Furnished in two sizes, made of well-seasoned cedar, well painted inside and out, and fitted with heavy hoops, large side drop handles and double removable covers.

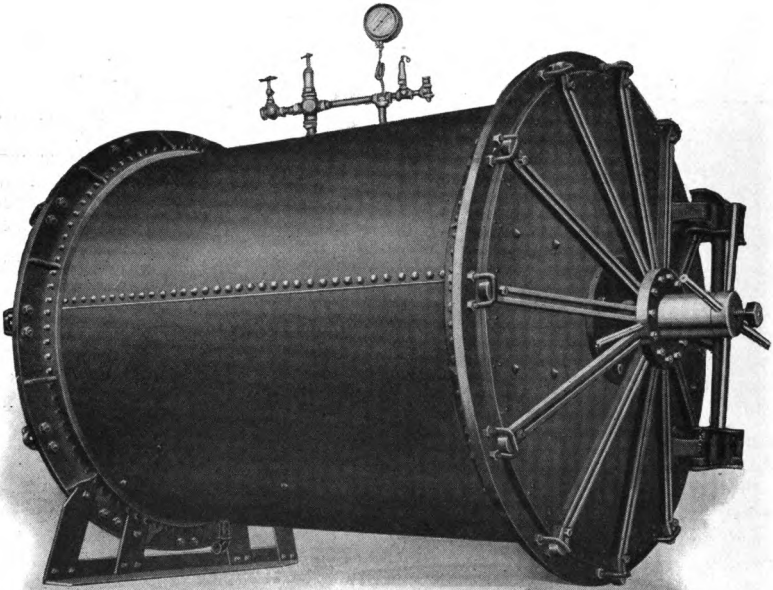


### Prices

For 4 or 5 gallon R. R. cans.....	\$4.25	Extra covers \$0.65
For 8 or 10 gallon R. R. cans.....	4.50	.75

Price Does NOT Include Can,

## Heavy Pressure Sterilizing Oven



In the production of certified milk the thorough sterilization of all bottles as well as cans and utensils of all kinds is imperative in order to meet the requirements of the controlling authorities. For this purpose the heavy pressure oven illustrated above is recommended. It is made of boiler plate; the doors close steam tight and a pressure of 10 pounds is safely carried. It is well known that the temperature of steam increases as the pressure is raised, steam at 10 pounds having a temperature of approximately 240 degrees Fahrenheit. At this temperature the bottles are quickly heated to 212 or over, and the application of steam being direct, the conditions for thorough sterilization are ideal.

The oven illustrated is 5 feet in diameter and holds one car or truck load of bottles. It is fitted with steam gauge, pressure-reducing valve, thermometer and drain pipe with valve. It is made with two doors so that it can be set through the wall between wash room and bottling room, the cars being run in from the wash room and the sterilized bottles taken out into the bottling room, thus avoiding direct communication between the two rooms.

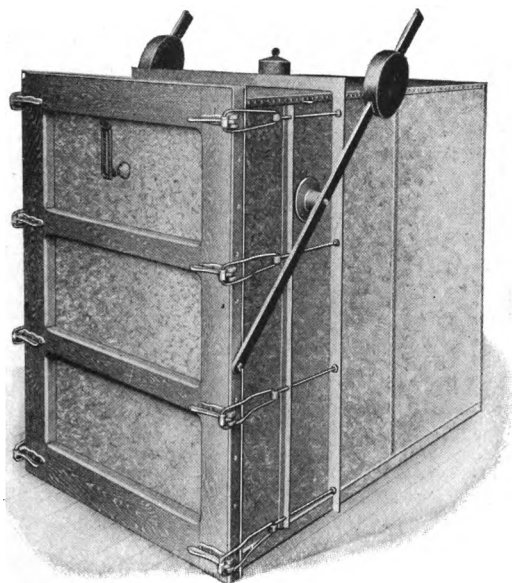
Special trucks are furnished for pressure ovens. Each truck holds 18 cases 3x4 quarts or 4x5 pints. The oven accommodates one truck at a time. By having extra trucks one may be sterilized while the other is being filled.

We can furnish ovens with door on one end only, if wanted; also extra long ovens for two or more cars at once and ovens 6 feet in diameter for extra large plants.

Write for prices.

# Ideal Sterilizing Ovens

## For Trucks



Closed

Each oven is fitted with perforated steam pipe and one angle bath thermometer.

Trucks can be arranged to use open bottom wood or galvanized cases instead of sprayer racks, if desired.

### Prices

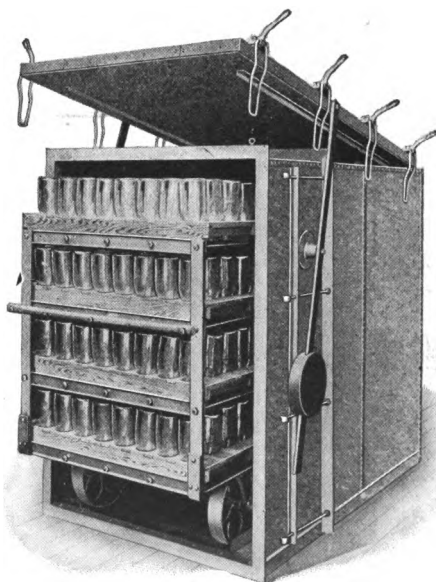
Do not include trucks or racks.

Capacity of Oven in Bottles	Size and No. of Trucks Will Hold	Price of Oven
384 .....	1—384.....	\$ 92.00
480 .....	1—480.....	102.00
600 .....	1—600.....	105.00
768 .....	2—384.....	127.00
960 .....	2—480.....	137.00

Write for prices on trucks.

Made of heavy galvanized iron and thoroughly braced. The door is counter-weighted and swings onto the top of the oven out of the way; door locks tightly. An angle iron track to guide truck wheels is included.

The 768 and 960 bottle ovens have doors on both ends and hold two trucks endwise. Oven may extend through the wall between the washing room and bottling room, the trucks being run in from the wash room and out into the bottling room. All sizes smaller than 768 bottles have but one door.



Open

## Ideal Sterilizing Ovens

The sterilizing ovens are made of the very best of heavy galvanized steel, well braced and put together. They are provided with divided removable shelves. The steam enters at the bottom and is distributed through the oven from perforated galvanized pipe placed near the bottom. The bottom is pitched so that all drain runs off easily. The top is oval in shape and has a controllable ventilator, besides special attachments for a straight bath thermometer with metal frame, showing a reading of from 70 to 310 degrees. The smaller sized ovens have a low and substantial stand on which they are to be placed. The doors have special fastenings and are fitted with cork seats, which prevents all possibility of steam escaping.

It is complete with stand, galvanized iron piping, valve, straight bath thermometer with expansion chamber, shelves, etc.

The operation of sterilizing milk jars is simple and effective. After the jars are sprayed, the racks with the jars are placed in the oven and sterilized thirty minutes. They are then taken out and placed on resting shelves and left until ready for use.

We have special baskets designed for these ovens, but we find where a sprayer is used that the sprayer rack is more convenient. This rack can be used in all the ovens except the 144 bottle size.

The ovens are made in the following sizes:

### Specifications and Prices

Capacity in Bottles	Weight, No. Pounds	Width, No. Inches	Length, No. Inches	Height, No. Inches	No. of Shelves High	No. Divisions to a Shelf	No. of Baskets Will Hold	No. of Racks Will Hold	Width of Table	Length of Table	Height of Table	Price Each
144	525	30½	47	37¾	3	2	12	.....	32	60	20	\$39.00
216	545	38½	47	37¾	3	2	18	9	40	60	20	42.00
288	600	38½	57	37¾	3	2	24	12	40	60	20	48.00



46 inches wide, 76 inches long.

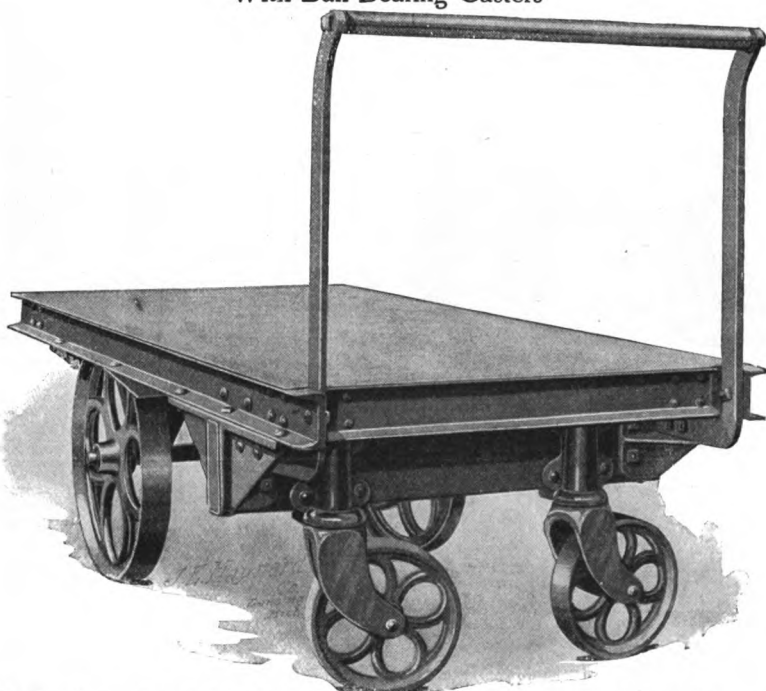
## Combined Sterilizing Oven and Truck

Consists of a steel truck body with galvanized iron housing. Perforated steam distributing pipes are arranged in the bottom. Cut shows the 288 bottle size with twenty-four 3 x 4 quart wood open bottom retainer cases. Will hold an equal number of 4 x 5 pint cases. If all pint cases are used, capacity of oven would be 480 bottles. Can be used with sprayer racks, if desired. No cases or sprayer racks are included in the prices. Made in two sizes.

288 bottle size, holding 24 cases	\$75.00
384 bottle size, holding 32 cases	\$85.00

## All Steel Trucks

### With Ball Bearing Casters



Frame is made of 3-inch Channel iron, securely fastened together at the corners by heavy steel bars.

The under work is of angle iron and heavy pressed steel construction, the whole being covered by No. 14 sheet steel, and riveted on with counter-sunk rivets, making an extremely smooth surface.

The handle standards are of bar iron with a 1-inch pipe handle connecting the two.

We furnish these trucks in fifteen sizes, the width being confined to 2 feet, 2½ feet and 3 feet, while the length may be varied. See table below.

These are furnished with either black or galvanized iron tops.

Nos. 1 to 8 inclusive have 12-inch wheels and 6-inch casters and are 14 inches high to top of platform. Nos. 9 to 22 inclusive, have 18-inch wheels and 9-inch casters, and are 19 inches high to top of platform.

No.	Size of Platform, Feet*	Diameter of Wheels, Inches	Diameter of Casters, Inches	Height to Top of Platform, Inches	Capacity, Pounds	Price, Each
1S	2 x 4	12	6	14	2,000	\$37.50
3S	2½ x 4	12	6	14	2,000	39.20
4S	2 x 5	12	6	14	2,000	39.20
5S	3 x 4	12	6	14	2,000	40.50
6S	2½ x 5	12	6	14	2,000	40.50
8S	3 x 5	12	6	14	2,000	43.90
9S	2 x 4	18	9	19	4,000	45.00
11S	2½ x 4	18	9	19	4,000	47.25
15S	3 x 4	18	9	19	4,000	49.50
16S	2½ x 5	18	9	19	4,000	49.50
18S	2 x 5	18	9	19	4,000	48.40
19S	2 x 6	18	9	19	4,000	49.50
20S	2½ x 6	18	9	19	4,000	51.75
21S	3 x 5	18	9	19	4,000	52.90
22S	3 x 6	18	9	19	4,000	54.00

\*The Trucks are about 4 inches longer over all. Write for discounts.

These trucks are not carried in stock, but shipped from factory on order.

## Platform Trucks

These Trucks have many points of excellence and superiority over the common truck, as will be readily seen by comparison.

The front wheels being casters, the truck will turn in its own length, and can be run onto an elevator or scales from any angle. The wheels are so large in diameter and so much of the weight of the load comes directly over them that one man can carry twice as much on it as upon any other truck made; and as instead of the ordinary rest in front, there are two caster

wheels, the operator can turn the truck in any direction with great ease. As it requires but one man to operate it, it can readily be seen that the saving in labor would soon pay for the truck.

We handle 21 sizes of these trucks with 12 and 18 inch wheels, and 6 and 9 inch casters respectively. We give below, however, but a few of the principal styles that are in common use.

Size of Platform in Feet	Height to Top of Platform	Diameter of Wheels in Inches	Diameter of Casters in Inches	Capacity in Pounds	Weight in Pounds	Style 1 Regular Wheels	With Patent Rubber Tires
2 x 3	14	12	6	1,200	125	\$24.00	\$36.00
2 x 4	14	12	6	1,200	152	25.00	37.00
2½ x 4	14	12	6	1,200	172	26.10	38.10
2 x 5	14	12	6	1,200	161	26.10	38.10
3 x 4	14	12	6	1,200	173	27.00	39.00
3 x 5	14	12	6	1,200	192	29.25	41.25
3 x 5	14	18	9	3,000	255	35.25	59.25

Write for Discount

## The Bergsather Gripper Truck

Two gripper arms are provided, one on each side. For handling full tubs of butter, ice cream tubs, boxes, etc., it saves quite a bit of the hard work. You run the truck alongside the object you want to move, raise the lever and the gripper arms engage the sides. Then walk away with your load.

It's well made and will stand hard usage.

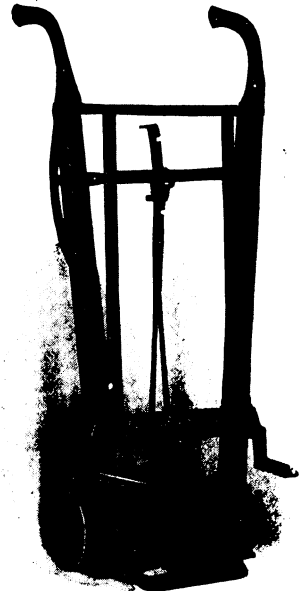
The No. 2 style, illustrated herewith, is made especially for dairy work. Is strong, well made and durable.

The cut shows a truck with an adjustable nose. With this attachment the truck can be used the same as an ordinary truck. When used as a gripper truck you have only to swing the nose back out of the way. It may be had with, or without the nose.

No. 2. With adjustable nose (as shown in cut)..\$4.75

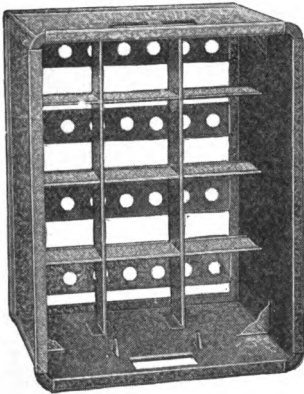
No. 3. With adjustable nose and folding grippers ..... 5.75

Prices are f. o. b. factory in Southern Minnesota.



# Milk Bottle Cases

Defiance Brand—All Steel



## The Retainer Lock is Simple, Yet Secure

The quality of material, excellence of design, good workmanship, finish, convenience and durability commend them to the experienced user.

They are made of heavy sheet steel formed by powerful machinery, so that every case is just like every other one. The cases are made up, then galvanized, so there are no raw edges whatever, and no part of the case is subject to rust.

The partitions are made of steel, wired top and bottom, and riveted to the sides.

We furnish them with or without retainers. The retainer is made of a single sheet of heavy gauge steel, wired, and galvanized after completion.

The retainer lock is simple but secure. It is out of the way and cannot be injured by ordinary usage, yet it is easy to operate.

We call particular attention to the manner in which **DEFIANCE CASES** stack one upon another. The stacking feature is accomplished without corner irons or projections of any kind. The bottom of one case fits inside the top of the next. There is no wasted space.

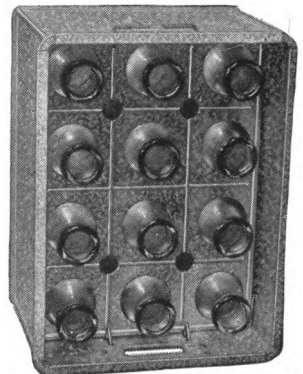
In lots of 1,000 or more the customer's initials will be embossed on the sides or ends of the case without extra charge. In lots of less than 1,000 the initials will be embossed at an extra charge.

Pint and quart cases are the same price, and an order for both pints and quarts will be priced on the basis of the total number of cases in the order.

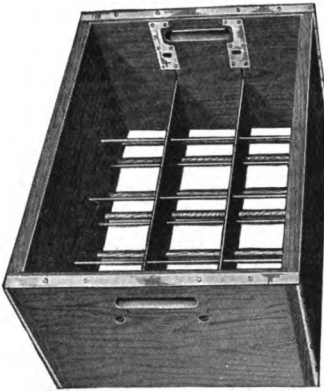
Price, including retainer, each.....\$1.95

Liberal reductions in lots of 100 or more. Cases without retainer cost 25 cents per case less.

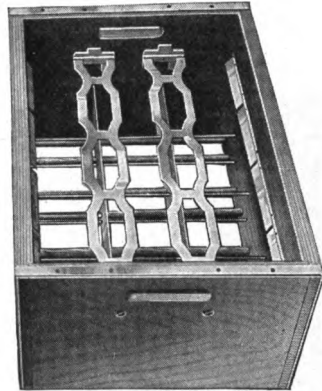
Retainers, separately, each.....\$0.30



## Milk Bottle Cases—Style "M"



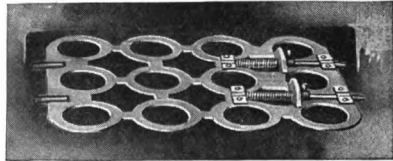
Plain Case.



Locker Case.

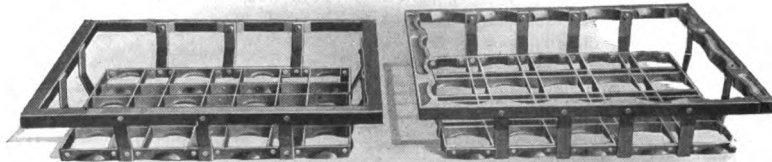
This is the highest grade, strongest and best constructed wood case on the market. The sides and ends are made of hardwood and securely banded around the ends. Ends of bands are riveted and set flush, so that there is no danger of catching on obstructions; bottoms are open; wood dowel rods for bottles to rest on. We furnish Style M cases plain, or with lockers attached. Plain cases may be used with removable bottle retainers.

Plain cases	List Prices
Half pints, 4x5, each.....	\$1.65
Pints, 4x5, each.....	1.65
Quarts, 3x4, each.....	1.55
Locker cases.	
Half pints, 4x5, each.....	2.50
Pints, 4x5, each.....	2.50
Quarts, 3x4, each.....	1.95
Retainers.	
For half pint cases, each.....	3.75
For pint cases, each.....	3.75
For quart cases, each.....	3.35



The Retainer.

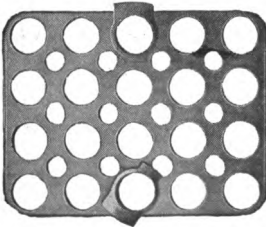
### Special Retainers



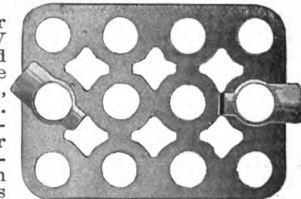
These Retainers are used principally with  $\frac{1}{4}$ -case bottle washing machines. They are very strong and well made. Heavily tinned.  
 For 4x6 pint, Style M or Style V case, each.....\$2.75  
 For 3x4 quart, Style M or Style V case, each.....2.50

### Style "V" Retainer

The cuts illustrate our new retainers for Style V cases which are illustrated on the next page. These retainers are light weight, simple and self-contained. No springs to get out of order, either on the case or retainer. The latch engages the hand hole in quart cases; in pint cases special slots are cut into the sides of the case. Made of steel, heavily galvanized.



Price, per pint case (4x5), each...\$0.50

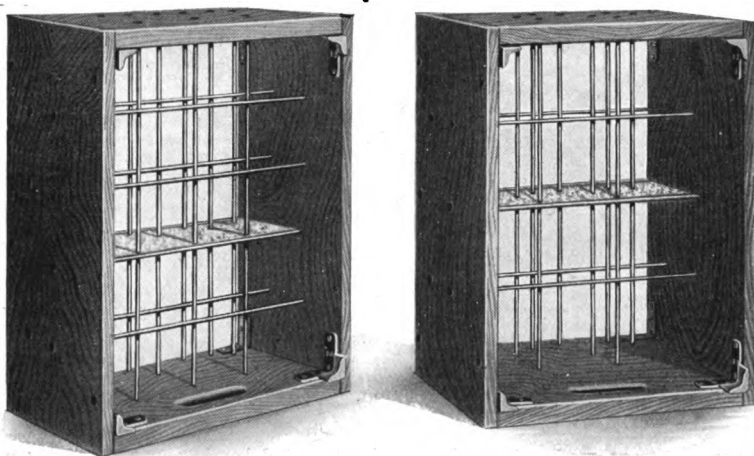


Price for quart case (3x4), each...\$0.50



# Milk Bottle Cases

## Style V



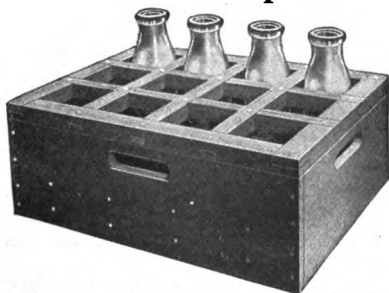
These are strong and durable, yet low priced, cases and probably fill the requirements of the average user better than any other at any price. They are made of hardwood with one-piece ends. The partition wires and bottom wires are riveted through the ends or sides. Improved corner pieces are furnished for stacking. A case is  $18\frac{1}{2}$  inches long by  $14\frac{1}{4}$  inches wide. Pint case is 8 $\frac{1}{2}$  inches high; quart case 10 $\frac{1}{4}$  inches high; all dimensions given being outside measurement.

### List Prices

$\frac{1}{4}$ -pint, 4x5 arrangement, each.....	\$1.25
$\frac{1}{2}$ -pint, 4x5 arrangement, each.....	1.25
1-pint, 4x5 arrangement, each.....	1.25
1-quart, 3x4 arrangement, each.....	1.10

Above prices subject to discount.

## Special Transfer Cases



The case here illustrated is made with special spacing so that pint, half-pint and quarter-pint bottles may be filled in a case bottle filler made for filling quarts. The divisions between the bottles are so made as to separate the bottles just the right distance to bring them directly underneath the filling valves, while the outside dimensions of the case are the same as the style M, style V, or Defiance.

Case is 7 inches high, and pint bottles are raised 3 $\frac{1}{4}$  inches from the bottom.

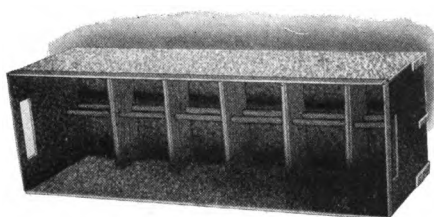
Bottles are easily put into and taken out of the case, as the necks are entirely above the top of the case. Cases are strongly made of 1-inch material, the dowels being mortised and riveted, and fastened to the sides with screws. Hand holes are provided on both ends and sides.

### Styles and Prices

3x4 to fill pints on quart filler, each.....	\$1.25
3x4 to fill $\frac{1}{2}$ pints on quart filler, each.....	1.25
3x4 to fill $\frac{1}{4}$ pints on quart filler, each.....	1.25
4x5 to fill $\frac{1}{2}$ pints on pint filler, each.....	1.35
4x5 to fill $\frac{1}{4}$ pints on pint filler, each.....	1.35
2x6 to fill pints on quart filler, each.....	1.25
2x6 to fill $\frac{1}{2}$ pints on quart filler, each.....	1.25
2x6 to fill $\frac{1}{4}$ pints on quart filler, each.....	1.25

## Milk Jar Delivery Cases Galvanized Iron

This case is strong and light, being well made of heavy galvanized iron. Around the outside at the top is placed a strong iron band, the galvanized iron being turned around this band. Three strips of band iron extending lengthwise



of the bottom and up the ends make the bottom rigid and prevent continual wear. All seams are half-inch and soldered entire length. Handles are reinforced by an extra strip of band iron. It is also fitted with a removable dowel rack to make cleaning easy.

Our galvanized cases are guaranteed to be the best that can be procured. We have a department devoted exclusively to their manufacture, and no money or time is spared to make them right.

### Sizes and Prices

Sizes .....	24 ½ pt.	12 pt.	12 pt.	18 pt.	8 qt.	12 qt.	12 qt.	12 ½ gal.	12 ½ gal.
Arrangement ....	3x8	2x6	3x4	3x6	2x4	2x6	3x4	2x6	3x4
List Price.....	\$1.65	\$1.40	\$1.50	\$1.85	\$1.40	\$1.65	\$1.65	\$2.25	\$2.25
.. In one dozen lots 10c per case less. For galvanized rack, add 10c per case.									
Any size furnished to order. Write for further information, giving quantity, size, arrangement and style of rack wanted. Special prices in large quantities.									

## Refrigerator Cases

These cases are made of one-inch well seasoned lumber, are carefully nailed and bound clear around each end with galvanized iron, making them doubly strong. The cover is fitted with inside hinges, preventing them being in the way and making it impossible to remove them while case is locked. The back edge of the cover is beveled. The cover and front of the case are fitted with small copper eyelets, through which seals may be passed and the case sealed, the lined eyelets protecting the wood part of the case when seals are broken.

A removable galvanized lining makes this the most desirable case for summer use, either for shipping, delivery or holding cases. The milk can be iced down and the case closed, thus serving as a perfect refrigerator at all times. No water can drip from the case as the ice melts to make a sloppy mess on the floor or shelves. The cases are fitted with removable wooden dowel racks.

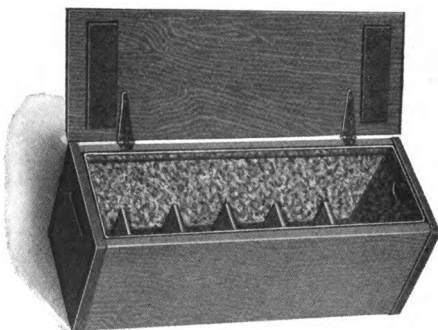
These cases are painted gray both inside and out and the racks are dipped in linseed oil, making them thoroughly waterproof.

Name and address can be stenciled on either side of the case and on cover without extra charge. Covers always included and will be charged for if not sent.

### Sizes and Prices

Sizes .....	12 pt.	12 pt.	18 pt.	12 qt.	12 qt.	18 qt.	12 ½ gal.
Arrangement .....	2x6	3x4	3x6	2x6	3x4	3x6	2x6
List price, each .....	\$3.35	\$3.35	\$3.50	\$3.60	\$3.60	\$3.90	\$4.50

For price of galvanized linings only take difference in price of wooden delivery cases and refrigerator delivery cases.



## Wooden Delivery Cases

These cases are identical with the refrigerator cases described above, except that they have no galvanized lining. Where it is not desired to use ice in the cases for cooling they answer every purpose. Have removable wooden dowel racks.

### Sizes and Prices

Sizes .....	12 pt.	12 pt.	18 pt.	12 qt.	12 qt.	18 qt.	12 ½ gal.
Arrangement .....	2x6	3x4	3x6	2x6	3x4	3x6	2x6
List price, each .....	\$2.40	\$2.40	\$2.60	\$2.75	\$2.60	\$2.65	\$2.90

We also furnish special cottonwood cases in lots of fifty or more at a much lower price. These cases are lock ended, bound with wire and securely nailed. Prices on application.

**PRICES ON THIS PAGE SUBJECT TO DISCOUNT.**

## Wire Delivery Baskets

### "Ideal" Wire Woven

This is considered to be the strongest, best and most attractive wire basket furnished to the trade. It is as good in every respect as baskets that are sold for twice the amount. Besides the regular heavy tinned wire frame, the basket is surrounded by close meshed, woven tinned wire, making it serviceable as a carrier for small, as well as large sized jars. The handles are so fitted that the basket balances at all times, whether full or partly full. The hand hold is well bound by spring wire. Made in two sizes only.

#### List Prices

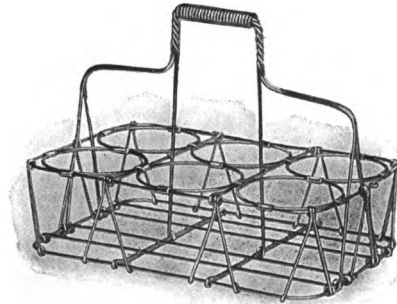
4-quart and 2-pint size, each.....\$1.25  
6-quart size, each..... 1.25



### Heavy Wire

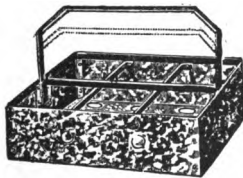
In general outline this basket is the same as the wire woven, but does not have the extra wire woven covering.

All crossings and joints are well fastened and soldered. They are retinned and will resist rust and wear and stand a great deal of rough usage.



#### List Prices

Four ½-pint size, each.....\$0.85  
Four pint size, each..... .85  
Four pint and two ½-pint size, each..... 1.10  
Six pint size, each..... 1.10  
Four quart size, each..... 1.10  
Four quart and two pint size, each..... 1.10  
Six quart size, each..... 1.10  
Four 2 quart size, each..... 1.40  
Six 2 quart size, each..... 1.60



## Galvanized Iron Baskets

These baskets are designed to be used in submerging our Ideal jars in deep tanks of cool water. The handle is so made that it can be pushed down even with the top of the bottles, and thus be out of the way of tiering the baskets. Besides being made of the very best galvanized iron, they are well ventilated.

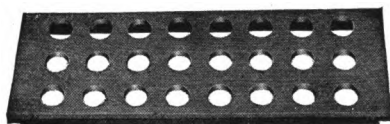
They are not designed for distributing baskets, and cannot take the place of the wire baskets for this purpose.

#### List Prices

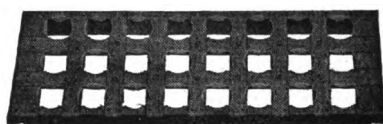
Size .....	24½-pt.	12-pt.	6-qt.	8-qt.	12-qt.
Arrangement .....	4x6	3x4	2x3	2x4	3x4
Each .....	\$1.65	\$1.50	\$1.35	\$1.50	\$1.65

PRICES ON THIS PAGE SUBJECT TO DISCOUNT.

## Sprayer Racks



Old Style



New Style

They are made to hold twenty-four bottles, three one way and eight the other. Any size jar can be cared for on the regular sized rack, with the exception of the  $\frac{1}{4}$ -pint and  $\frac{1}{2}$ -gallon jars, for which racks must be made to order.

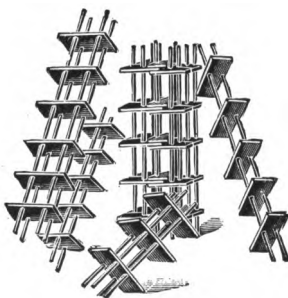
We furnish two styles of these racks. The old style, not having extra braces, is more especially designed for resting racks, and can be furnished in shorter lengths, or sizes, to order. The new style rack is especially adapted for use as a sterilizing oven rack, being made of numerous cross-pieces, mortised and riveted together by tinned white metal rivets, and all securely nailed on the main cross side and end pieces by copper nails, which cannot rust. New style made in one size only.

Dimensions: 36 inches long;  $12\frac{1}{4}$  inches wide;  $3\frac{1}{4}$  inches high; with holes  $2\frac{7}{8}$  inches at top, and  $2\frac{3}{8}$  inches at bottom.

### Prices

Old style, each.....	\$0.45
New style, each.....	1.15

## Partitions or Racks



### For Galvanized Iron, Wooden or Refrigerator Cases

These racks can be thrown across a room without breaking, simply rebounding. They are made up with a combination of thoroughly seasoned wood braces and birch "dowl" cross pieces, well nailed.

The racks are made to fit all sizes of our cases and can be made to order to fit any style case, providing the inside measurements of the case are given, as well as the capacity and diameter of the bottle used. Extra racks are packed in bundles.

### Prices

24½-pt. 3x8	12-pt. 2x6	12-pt. 3x4	18-pt. 3x6	12-qt. 2x6	12-qt. 3x4	18-qt. 3x6	12½-gallon sizes. 2x6 arrangement.	
Any size, each .....								\$0.15
Galvanized iron racks, any size, each.....								.25

## C. P. Milk Bottles

The following are the points by which a milk bottle is judged:

Quality of glass,  
Shape,  
Color,

Uniform thickness,  
Annealing,  
Capacity.

Having under our control the entire milk bottle output of one of the largest glass works in the United States, we are in position to guarantee our bottles in all respects.

**Quality of Glass**—The quality of glass depends, first, upon the material it is made of; next, the proper balancing; most of all, upon the knowledge and skill of the mixer. With the proper proportions and the proper treatment a grade of glass results, which, when the details of manufacture are properly carried out, results in a perfect milk bottle. This we claim for our bottles.

**Shape and Color**—To a large extent the consumer's idea of the richness of the milk is an impression formed by its appearance in the bottle. That is why you should pay particular attention to these two points. Upon the shape and the proportion between the size of body and neck the depth of the cream line depends. A deep cream suggests rich milk; a shallow cream the reverse.

Color has also much influence. Some bottles have a "greenish" tint to the glass which conveys the impression of thin milk. We have gone to large expense in getting up special molds for our bottles that produce a slightly tapering neck and show the cream to its full value. We strive, and invariably succeed in producing glass of slight "purplish" tint, which is especially desired.

**Uniform Capacity**—Some milkmen place uniform capacity first in the list of requirements which bottles must meet. In many cities there are ordinances requiring that all milk bottles be full capacity, no shortage whatever being permitted. We use the utmost care on this point. Our bottles are as near actual capacity as it is possible to make glass bottles.

**Annealing**—A flint jar must be evenly and carefully annealed to be durable and to withstand all the sudden changes to temperature to which it is subjected

in washing, sterilizing and chilling. To this point the very best efforts of our factory force are concentrated and all bottles are properly annealed.

**Different Cap Finish**—By far the larger portion of milk bottles made are No. 2 cap finish, the cap diameter being  $1\frac{1}{4}$  inches. Large dealers, however, sometimes wish bottles that cannot be used by competitors. To accomplish this, bottles having larger or smaller cap finish than regular are used.

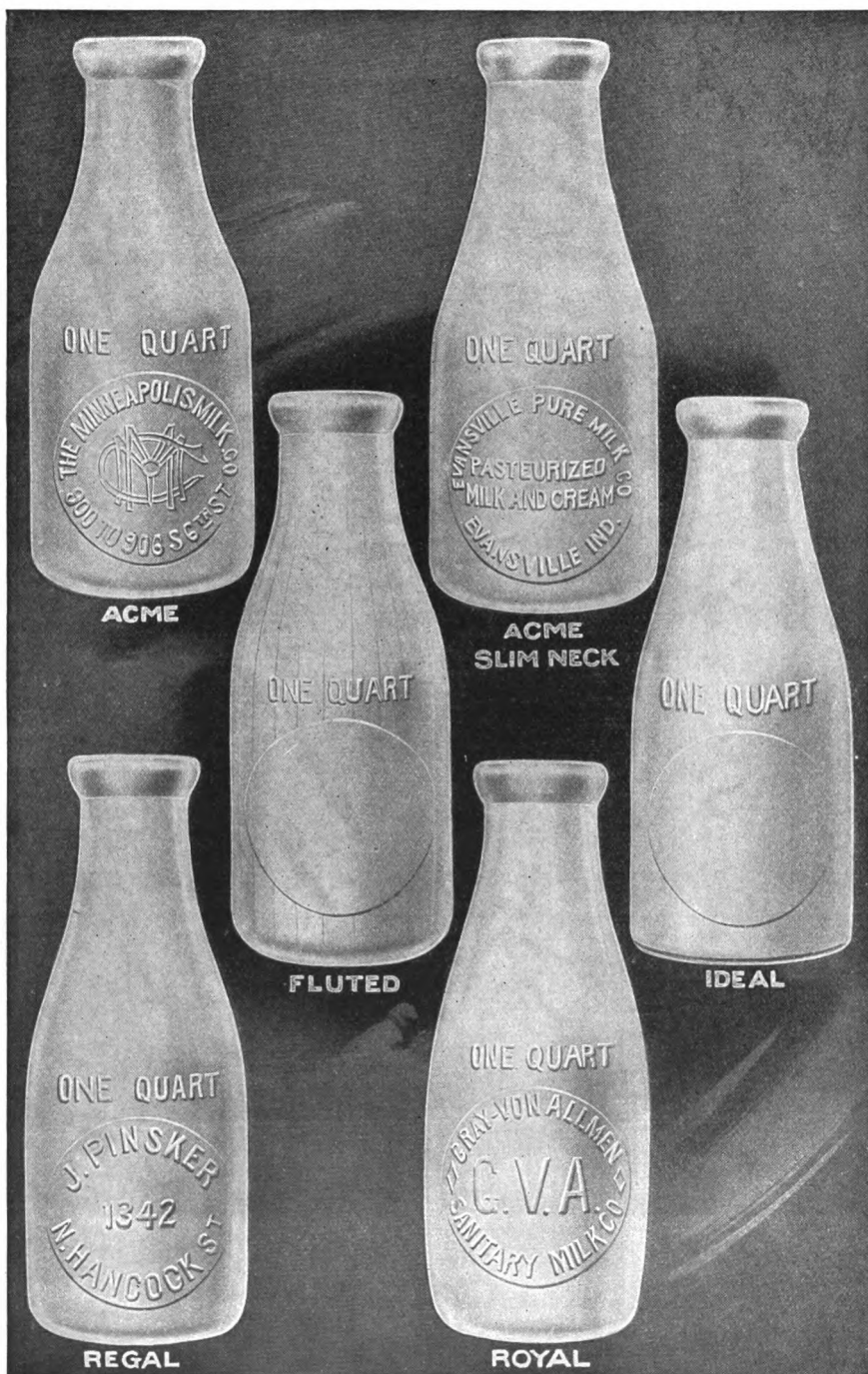
Caps for special size bottles are now easily procured so that it no longer affords the desired protection. The special finishes correspond to the cap sizes given on page 206.

**Lettering**—Lettered bottles are furnished in lots of one gross or more, of each size ordered, at the same price as regular plain jars with an additional expense of \$2.50, which is the cost of lettering each size name plate. This extra expense is on the first order only. Each single size bottle must have a different size name plate. Six weeks is the usual time required to execute an order for lettered bottles.

As a general rule, the simpler the design adopted the better appearance the bottle will make. Elaborate designs interfere with cleaning. In ordering lettered bottles be careful to give exact lettering wanted.

**Weights of Bottles**—The approximate shipping weights, per gross, of the different sizes of bottles, U. S. standard measure, are as follows:

Size.	No. to crate.	Weight, per Gro., lbs.
$\frac{1}{4}$ pint .....	1 gross	75
$\frac{1}{2}$ pint .....	1 gross	125
1 pint .....	$\frac{1}{2}$ gross	180
1 quart .....	$\frac{1}{2}$ gross	280
$\frac{1}{2}$ gallon .....	1-3 gross	400



## C. P. Milk Bottles

The six bottles illustrated on the previous page represent our stock molds from which we can furnish lettered jars. These are all excellent shapes.

The cut is made direct from photographs and shows up the characteristics of the several bottles.

The **Acme** is the most generally used of any shown. The shape of the neck and shoulder shows up a deep cream line—deeper than many so-called slim-neck bottles. The neck does not increase appreciably in size until about one-third the distance to the shoulder and does not taper as gradually as in the other styles. The bottom is rounded and sides are straight from bottom to shoulder. The **Acme** is carried in stock.

The **Acme Slim Neck** has the same shape bottom and body as the regular **Acme**. The neck is extremely slim to show deep cream line. This shape is made to order only.

The **Fluted** style is in general the same shape as the **Acme**. The glass, being "fluted" on the outside, gives the bottles a very pleasing appearance and is easy of identification. Made to order only.

The **Ideal** has a flatter bottom than any of our other styles. The corners are slightly rounded, however, and bottles will not chip. This style is carried in stock.

The **Regal** is similar to the slim neck **Acme**, but has a longer neck and the curve is more sweeping and perhaps more graceful. Made to order only.

The **Royal** has practically a continuous curve from top to bottom, only a short distance on the sides being straight. The neck is rather slim and the bottom decidedly rounded at the corner. Made to order only.

Any of the above styles can be furnished with lettering in the plate recess at our regular prices. The quarter pint bottles are furnished plain only.

Size.	Prices			
	Per Doz.	Per Gross.	3 Gross, Per Gross.	5 Gross, Per Gross.
¼ Pint.....	.....	.....	.....	.....
½ Pint.....	.....	.....	.....	.....
Pint.....	.....	.....	.....	.....
Quart.....	.....	.....	.....	.....
½ Gal.....	.....	.....	.....	.....

See page 303 for conditions regarding lettering, weights of bottles, etc. Bottles are No. 2 cap finish, unless expressly ordered otherwise.

### Imperial Measure Bottles and Special Sizes

We furnish to order Imperial Measure Bottles in half pint, pint and quart sizes, plain or lettered. Prices on application.

Can also furnish bottles of five and six to the gallon capacity, to order only.

### Combination Cap and Tin Top Finish

Our Tin Top Bottles are the same in general appearance as the **Ideal**. They have the seat or cap finish in addition to the tin top trimming or cover, so that when desired pulp caps can be used.

Combination Cap and  
Tin Top Finish.

Size.	Prices			
	Per Doz.	Per Gross.	3 Gross, Per Gross.	5 or 10 Gross, Per Gross.
¼ Pint.....	.....	.....	.....	.....
Pint.....	.....	.....	.....	.....
Quart.....	.....	.....	.....	.....
½ Gal.....	.....	.....	.....	.....

**Lightning Tin Top Trimmings** with cover, spring and wire fastener; can be easily attached to jars where old trimmings become rusty or worn out. Furnished in dozen, half gross or gross lots.

One dozen.....\$0.20      Half gross.....\$1.00      Gross.....\$1.75

### Condensed Milk Tumblers

Sealed with No. 4 Tumbler Cap, about 2½ inches in diameter and heavier than regular cap. Made in half-pint size only. In ten-gross lots we can furnish tumblers with the customer's name blown on the side at a small extra expense for lettering the name plate, on first lot only, unless a change of design is wanted, in which case the regular charge is made.

Prices	
Plain, per dozen.....	Per gross.....
5 gross lots, gross.....	10 gross lots, gross.....
Lettering name plates, two.....	

#### No. 4 Tumbler Pulp Caps

500 lots.....	5,000 lots, per M.....
1,000 lots.....	10,000 lots, per M.....

Prices on Application.



## C. P. Milk Bottle Caps

All of our Caps are made of the very best of spruce fibre and are absolutely odorless and tasteless. We use the very best white paraffine in waterproofing, and spare no pains in making them befitting the purpose for which they are intended. All paraffining is done after the Caps are cut, so that the edges as well as the sides of the Caps are made thoroughly waterproof.

**Keystone Brand**—Made of heavy stock, heavily paraffined; our best Cap.

**Shield Brand**—Similar to the Keystone brand, but made of stock a little lighter in weight; also heavily paraffined.

**Bell Brand**—This is an unparaffined Cap and is made of the same thickness and quality of board as the Keystone, but is not waterproofed. Not furnished in lots of less than 5,000.

**Diamond Brand**—It is made of stock a trifle thinner than the Shield brand and is waterproofed.

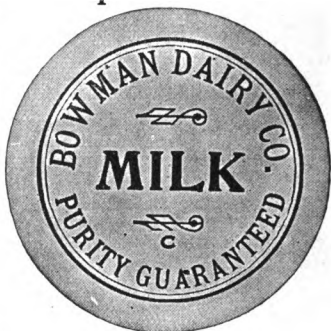
**Crown Brand**—This is made of the same stock as Diamond brand and is unwaterproofed. Not furnished in less than 5,000 lots.

**Printing**—The Keystone, Shield, Diamond and Lip Caps can be printed in lots of 10,000 or more at no extra expense, but when 5,000 only are ordered printed there will be an extra charge of one dollar made to cover the cost of making a printing die. This expense will be on the first order only. Customers having previously ordered printed Caps of us and wishing to **change** the printing will be requested to pay this extra charge providing only 5,000 are ordered.

**Sizes**—We manufacture several sizes of Caps. The following list gives the diameters of the various sizes:

Size.	Diameter.
No. 1.....	1 7/8 in.
No. 10.....	1 25/32 in.
No. 3.....	1 23/32 in.
No. 2.....	1 21/32 in.
No. 5.....	1 1/2 in.

The No. 2 is the standard size and is furnished unless otherwise ordered.



Printed

### Prices

Brands—Keystone, Shield, Bell, Diamond, Crown.

1,000 lots.....	.....
5,000 or 10,000 lots.....	.....
25,000 or 1 1/2-bbl. lots.....	.....
50,000 or bbl. lots.....	.....
250,000 or 5-bbl. lots.....	.....

### Prices on Application.

Write for special prices on year's supply of 100,000 or more Caps, to be shipped at regular intervals.

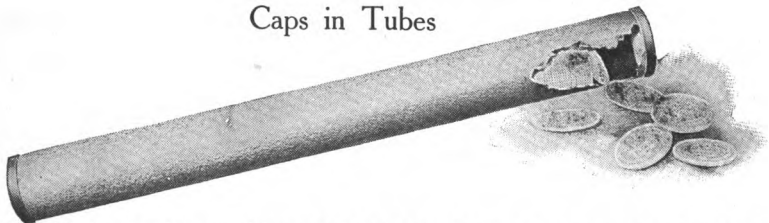
### The G. P. Lip Cap

The slight additional cost for Lip Caps is money well invested. The lip projects out from the body of Cap about 1/4 inch. When the Cap is seated in the bottle the lip extends above the edge and makes a very convenient hold for the fingers in removing the Cap, making cap lifters, forks, pocket knives, etc., entirely unnecessary. The Cap is not destroyed in removing, but may be used to seal bottles after a portion of the contents has been drawn off. Made in one thickness and quality of board and is thoroughly waterproofed. Made in No. 2 size only.

1,000 Lots	5,000 or 10,000 Lots	25,000 1/2-bbl. Lots.	50,000 1-bbl. Lots	250,000 5-bbl. Lots
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### Prices on Application.

### Caps in Tubes



For use in capping machines and for cleanliness in storing, caps in tubes are preferable. We supply the No. 2 size in tubes, as illustrated. Other sizes or lip caps cannot be furnished in tubes. Price of caps in tubes is 3 cents per 1,000 above price for bulk caps in same quantity.



## Tin Bottle Cap and Seal



Used largely for certified and fancy milk and cream. Renders tampering impossible. Cover of cap is embossed with dealer's name; may be dated by embossing when filled, making the appearance uniform and neat. Seals are plain or with the name, etc., embossed. Prices on application.



## Paper Bottle Seals. Style No. 9



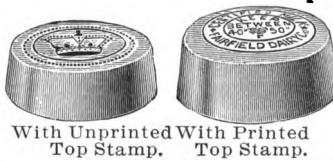
Neat and proof against tampering; reasonable in price. Cut shows amount of matter that can conveniently be incorporated. Seals are gummed and adhere easily to the bottle. Furnished in green and white, red and white, blue and white, or chromatic and white. Unless otherwise specified, we send the green and white. Samples and prices on application.

## 2 1-4 Inch Parchment Caps

These are made of very heavy vegetable parchment paper, odorless and tasteless. The caps are designed to be used underneath the pulp caps, protecting the milk or cream from any dust or other matter that might be attached to the pulp cap. Price, F. O. B. Chicago, per 1,000.....\$0.15  
Discount for larger quantities.



## Tin Foil Caps



Where an especially neat package is wanted, these tin foil caps will be found desirable. They are largely used for certified milk and cream. We can furnish them either plain or colored and with or without printing. As they have to be made to order, it requires three to four months to deliver. Prices are subject to market changes and will be given on application. Can also furnish flat tin foil circles 5 inches in diameter, plain or printed.

quires three to four months to deliver. Prices are subject to market changes and will be given on application. Can also furnish flat tin foil circles 5 inches in diameter, plain or printed.

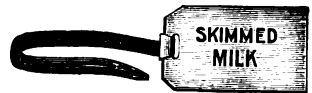
## Skimmed Milk Tags



Tin Tag.

Heavy steel retinned and stamped. Brass spring fastening. Each .....\$0.05 Per doz.....\$0.50

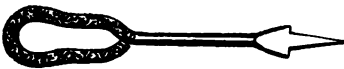
Some cities require that indestructible tags be attached to cans of skim milk. Prices are F. O. B. Chicago.



Brass Tag.

Polished heavy brass, sunken letters filled with black enamel; strong leather strap; neat and tasty. Each.....\$0.20 Per doz.....\$2.00

## Acme Cap Lifter



Very convenient in the kitchen. Some milkmen use it as an advertisement; others sell them at good profit. Once used, becomes a necessity. Prices are F. O. B. factory, and include lettering on handle as desired, not exceeding 25 letters. Sample on request.

250, per lot. \$3.50 500, per lot. \$5.00  
1,000, per M. 9.00 5,000, per M. 8.50  
10,000, per M. 8.00

## Bottle Checks



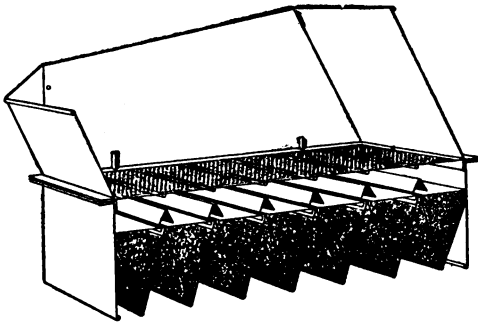
One Side.



Other Side.

Very desirable for keeping track of jars when sold over the counter. Made either round, square or octagonal in shape, of brass or aluminum, with raised letters on both sides. Prices are F. O. B. Chicago.  
Per 100.....\$1.80  
Per 500.....5.00  
Per 1,000.....9.00

## Cuppel Sanitary Strainer



Illustrating type of Nos. 1, 2 and 3 sizes.  
For milk dealers.

The "Cuppel" Strainer not only thoroughly cleans either milk or cream, but it is absolutely sanitary in its construction and can be sterilized in less than five minutes. Because of its peculiar construction it has from four to six times the capacity of any other strainer now on the market. Its durability and life are guaranteed, as there are no running parts to wear out. It requires no power to operate and no labor to prepare it for use the following day. During the strain-

ing process it should be rinsed out occasionally according to the amount of milk in the "run." It should be rinsed from the bottom with water. No sediment can wash through the fine mesh construction of the Cuppel Strainer, and a clean milk is obtained constantly. This strainer is now daily being put to severe tests in well known dairies, and it proves all we claim for it.

### Special Features

It thoroughly cleans milk or cream.

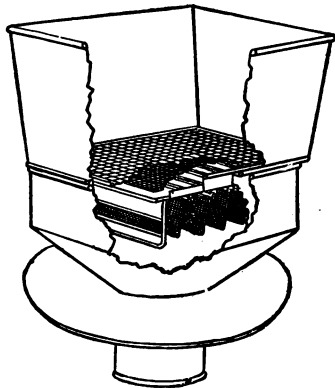
It is absolutely sanitary and can be sterilized in less than five minutes.

It has from four to six times the capacity of any other strainer because of its scientific construction.

It costs from 75 to 90 per cent less than any other recognized milk cleaning device.

It is long lived, as there are no running parts to wear.

It is economical, since it requires no power to operate and no labor to prepare it for use the following day.



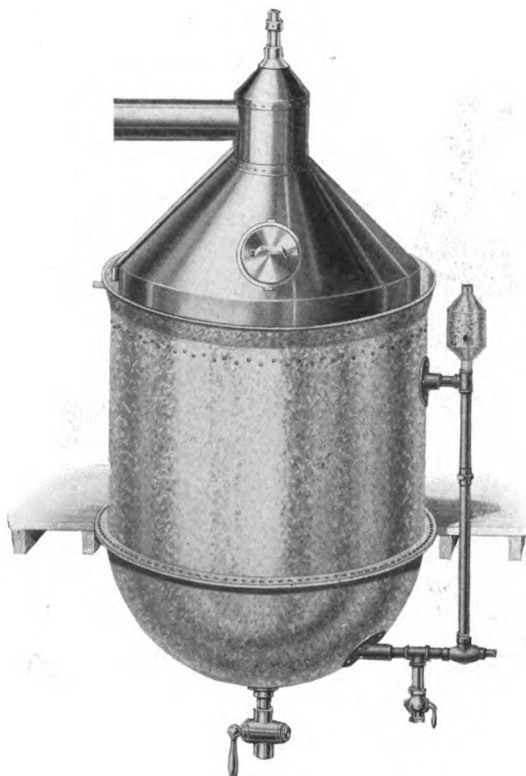
Illustrating No. 4 Size.

Made in the following sizes :

No. 1—20x24 for receiving room.	Price.....	\$60.00
No. 2—18x20 for 12x20 bottle fillers.	Price.....	55.00
No. 3—15¼x15¼ for small bottle fillers.	Price.....	50.00
No. 4—6x8 for producer's use, with funnel to fit can.	Price.....	18.00
No. 4—6x8 for producer's use, plain, without funnel.	Price.....	15.00

In ordering, state whether to be used for milk or cream, as the mesh differs.

## Condensing Pan



With this pan a creameryman, an ice cream manufacturer or any plant with a surplus of skim milk can convert it into plain condensed milk at a fairly rapid rate. The apparatus is simple, first cost is low, no expensive help is required, in fact, there is very little labor attending its use.

It consists of a copper kettle with a galvanized steel jacket with hot water space between. There is also needed a positive pressure blower and an exhaust fan. The blower is connected to the top, the exhaust fan to the large 6-inch pipe at the left. The operation is to apply heat to the milk through the hot water jacket by means of live steam which heats and circulates the water. The pressure blower forces air to the bottom of the pan and it bubbles up through the milk, the exhaust fan drawing off the vapors. The pan holds about 200 gallons of milk. To start with, it is filled, and as it condenses down more milk is added and the operation continued all day. At night the condensed is drawn off in cans and the apparatus cleaned up for the next day. The entire top is removed for cleaning. Pan is about 4 feet in diameter and is furnished complete with fittings as shown.

Price, .....\$500.00

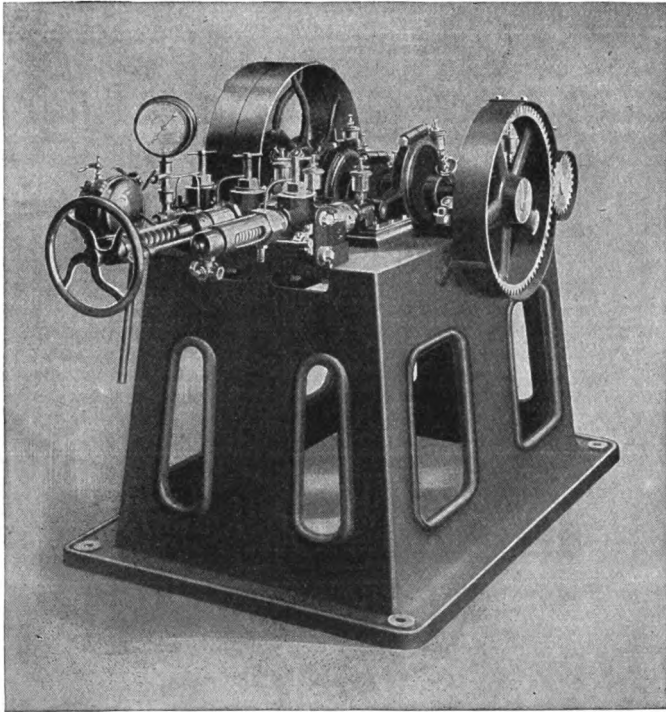
### Pressure Blower

Use No.  $\frac{1}{8}$  Garden City Blower. See blower list.

### Exhaust Fan

With 6-inch suction. Price .....\$25.00

# The Gaulin Homogenizer



Special Catalog on Request.

The Homogenizer is a machine for making liquids homogeneous. It breaks up the fat globules in milk or cream and divides them into particles so small that they cannot rise to the surface. When this is done milk or cream remains of uniform composition indefinitely.

The Gaulin Homogenizer is an European invention. On that continent its reputation is now firmly established as a standard and standardized machine. The many uses of this machine are just coming to be realized in America, and wherever introduced it has proved itself a money-making addition to the equipment of the plant in which it is installed.

The Gaulin Homogenizer consists of a triplex pump, each cylinder having a suction and discharge valve. In the discharge pipe is placed the homogenizing valve, which may be compared to a safety, or relief valve, held closed by a spring and set to open at from 1,000 pounds to 3,000 pounds per square inch. The valve disc is made of agate and is carefully ground into the seat. The pressure gauge indicates pressure in kilograms per square centimeter (metric system). One kilogram pressure on the gauge is equal to about 14½ pounds per square inch. Milk cannot pass through the valve without the globules being crushed, pulverized and so thoroughly incorporated into the serum that separation is impossible.

## The Only Successful Machine

The Gaulin system is the only one that has proved uniformly successful. Numerous attempts to construct Homogenizers employing other principles have failed. Such success as has been attained has been due to trespass upon the principle of the Gaulin and consequent infringement of the broad rights conferred by the patents under which it is made.

The Gaulin machine is the only one sold and protected by basic patents.

The only machine which can be operated without close attention.

The machine requiring the least pressure to homogenize, also taking the least power.

The only one that **thoroughly** homogenizes and breaks up the fat globules.

The only machine **successfully** used in foreign countries.

## Uses of the Homogenizer

**Market Milk.**—The fact that cream will not rise on homogenized milk has perhaps caused many who should have availed themselves of the machine to defer installing it. The consumer has been thought to demand that the cream show distinctly and generously on milk purchased for domestic use—taking the absence of such a showing as evidence of inferiority or adulteration. It is a fact, however, that butterfat in most cases serves its purpose best when it is in, not on, the milk. For infant feeding and for drinking purposes homogenized milk is to be preferred to that not treated. The composition of the milk in the bottle is absolutely uniform—the last ounce is as rich as the first. The child gets milk at the different feedings of the same composition—not cream one time and skim milk the next. From the standpoint of desirability for domestic use, homogenized milk is far superior and its speedy introduction on its merits should be assured.

**For the Cream Dealer.**—The wholesale cream dealer can use the homogenizer to great profit.

If he supplies ice cream manufacturers he can furnish them with homogenized cream, getting an extra price therefor, which allows him a good profit. He can also guarantee to take care of his customers the year around, whatever amounts they may require.

Many restaurants and hotels would serve homogenized milk and cream if it was to be had. For serving milk from a can, the homogenized product is very desirable on account of the uniform quality, the last served being as rich in fat as the first taken from the can. The possibilities of the machine to the cream dealer are so wide and so varied that we cannot enumerate them all here. We shall be glad to make suggestions to interested parties with respect to the conditions in their business.

**For the Ice Cream Manufacturer.**—It is a quality improver. It makes ice cream smoother, more velvety and richer in appearance and taste than if made with the same percent of fat but not homogenized. It prevents "crystalizing" and "icing." Cream does not deteriorate so rapidly when held over. Cream can be heated in pasteurizing to a high degree and when homogenized will have no cooked taste.

It solves the surplus and shortage problem. Fresh (unaged) cream can be frozen without loss. Cream can be made as wanted from fresh skim milk and sweet (unsalted) butter, or from condensed milk, water and butter, or from skim milk powder, water and butter.

We especially invite correspondence with ice cream makers, as we feel confident we can demonstrate the immense advantage of the Homogenizer in making their business more profitable.

**Condensed Milk Manufacturer.**—Homogenization prevents the separation of cream on evaporated milk. Many condensing plants in Europe use the Gaulin Homogenizer, and they are rapidly being adopted in America. Full particulars will be furnished on request.

**The cost of homogenizing** may be stated as being the cost of power required to drive the machine. It requires little or no attention, is easy to care for and clean, and is so strongly made as to require no repairs. The table gives the capacity of and power required by each size, from which, the cost of power being known, the cost of homogenizing per gallon is easily calculated.

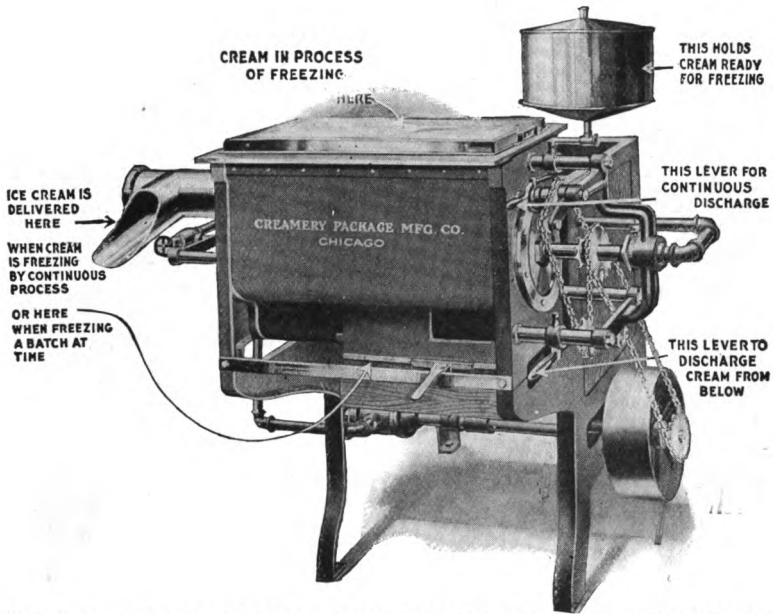
Capacities, Dimensions and Power

Size.	Dimensions Over All.	Capacity Per Hour.	Weight.	Approximate Horsepower Required.
AA	5 ft. 5 in. x 3 ft. x 3 ft. 6 in.....	70 gals.		3
B	6 ft. 10 in. x 3 ft. 7 in. x 4 ft. 3 in....	200 gals.	2,500 lbs.	6
C	8 ft. 4 in. x 5 ft. 3 in. x 4 ft. 11 in....	350 gals.	3,800 lbs.	12

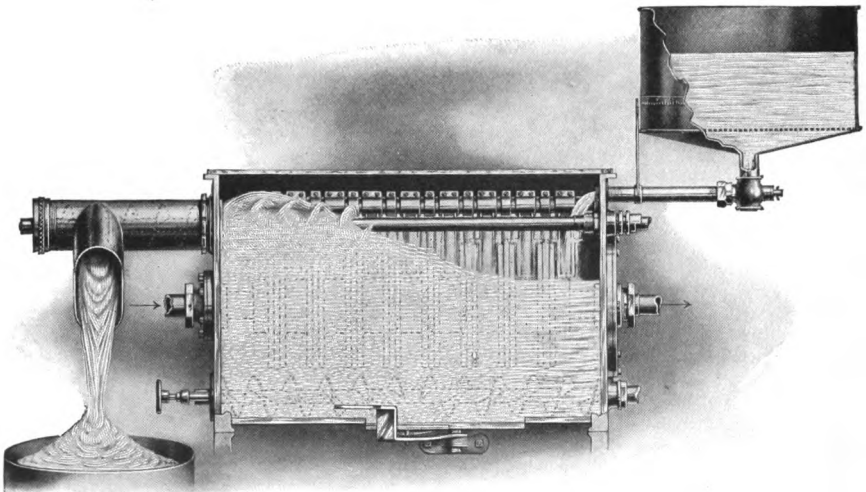
Speed of Drive Pulley 300 R. P. M.

Any further information desired concerning the machine, prices and terms of sale will be cheerfully furnished to interested parties on request.

## Disc Continuous Freezers

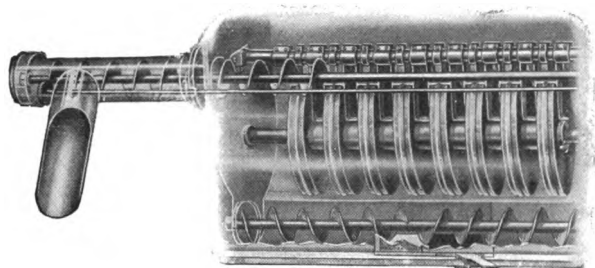


The above cut is explanatory of the different parts of the Disc Freezer. It illustrates the A size, combination freezer, brine tank and pump, but the principle of operation is the same in all machines.



This illustration of an interior view of the Disc Freezer will explain the process of freezing. The brine travels through the disc coil in the direction indicated by the arrows. The cream travels in opposite direction, thus no refrigeration is wasted. Note how the cream swells in freezing and is caught up by the conveyor worm and discharged into the packing can continuously—no transferring. The disc process is visible, continuous and sanitary.

## Disc Continuous Freezers



Interior view of the freezing compartment, showing the location of the freezing coil, finger bars, continuous discharge (at the top) and batch discharge (at the bottom).

### The Principle

Instead of putting the cream in a vessel equipped with a dasher and surrounded by brine, a precisely opposite course is followed in the Disc Freezer, the brine being forced through a series of revolving discs, immersed in the cream. No special dasher is required, the discs agitating the cream sufficiently for all purposes.

The first effect of this turning about is a saving in refrigeration. The discs have a very large surface area and the exchange of temperature between the cold brine within the discs and the cream surrounding them is easy. No cold is lost into the atmosphere. The saving is large.

A further advantage of the disc principle is the capacity. Our largest size makes up to 200 gallons of cream per hour, yet requires no more space than other freezers of one-fourth the capacity or less.

Still another advantage of the disc principle is that the operation of freezing is in full view. Through the plate glass cover the operator may view the freezing process, and can hasten or retard it, as his judgment dictates, producing absolutely uniform quality from the beginning to the end of the run, and from day to day.

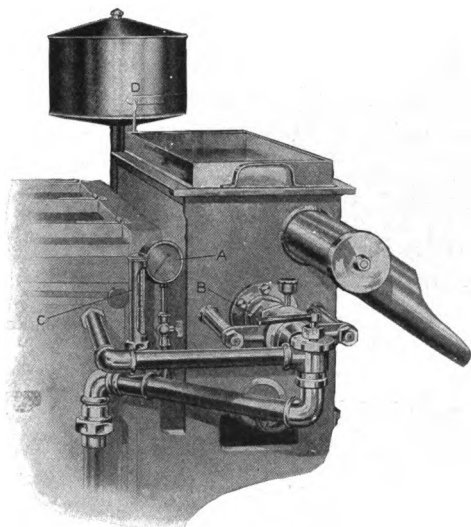
### How the Disc Freezer Operates Continuously

The larger size freezers consist of two freezing compartments, each with its disc coil and brine connections, side by side, one compartment slightly above the other, with suitable connecting passageways for the cream. For the purpose of describing the continuous process, however, the freezer may be considered as a single compartment, the brine being fed into the discs at one end and discharged at the other. The cream inlet is at the opposite end of the compartment from the brine inlet to the discs. The brine and cream, therefore, travel in opposite directions when the machine is operated continuously.

As the cream flows into the compartment it comes in contact with the cold surface of the first disc, then the second, and so on, each disc reducing the temperature of the cream to a point lower than the previous one. The metal fingers suspended between the discs, in close proximity but not touching them, serve to keep the cream agitated, so that by the time it has traversed the length of the compartment the cream is frozen to the proper hardness, and by reason of the agitating effect, is expanded, or swelled, when it is caught up by the worm at the top and conveyed through the discharge pipe to the packing can. There is no time lost between batches, the process being continuous.

When the run for the day is finished the cream in the freezer is discharged through the bottom discharge.

## Disc Continuous Freezers



Shows ease of control of small freezers. Pressure Gauge "A" indicates brine pressure on coil. Cock "B" regulates brine flow. Thermometer "C" shows brine temperature. Feed Can "D" opens and shuts inlet valve by turning can one-fourth way around, and has index to indicate position of opening. By means of these points the operator has complete control of the freezing process.

Large capacity freezers are regulated just as easily as the smaller ones.

Whether operated continuously or as an intermittent machine, there is no waste of cream with a Disc Freezer. The machine empties itself completely in a shorter time than required by any other.

### Special Flavors and Fancy Ice Cream

The facility with which the Disc Freezer can be emptied, and the fact that small batches can be successfully handled as well as large ones, makes it the freezer par excellence for making special flavors and fancy ice creams and ices.

### A Disc Freezer for Every Ice Cream Business

The Disc Freezer is adapted to any ice cream business; the wholesale manufacturer putting out thousands of gallons per day can equip his plant exclusively with Disc Freezers at less expense than the same capacity can be secured otherwise. Besides a lower investment per gallon of output, he can reduce the labor cost of making ice cream by a large percentage. In most cases the saving will be fully half.

In order to get the full benefit the entire equipment should be Disc Freezers, enabling a complete rearrangement of the work.

Disc Freezers can be operated on brine from a refrigerating machine or on brine made from ice and salt. For installations of the latter kind we furnish brine-making tanks and pumps, complete details of which will be given on request.

The advantages of disc freezing at the disposal of the large user using from one to a dozen of the largest size machines may be realized in proportionate measure by the smallest user. The line of freezers is so varied as to cover every requirement.

The B and A sizes of freezers are single-compartment machines, having but one freezing coil. They are combination outfits consisting of the freezer proper, brine-making tank and brine-circulating pump combined in a single machine occupying very small floor space considering the capacity.

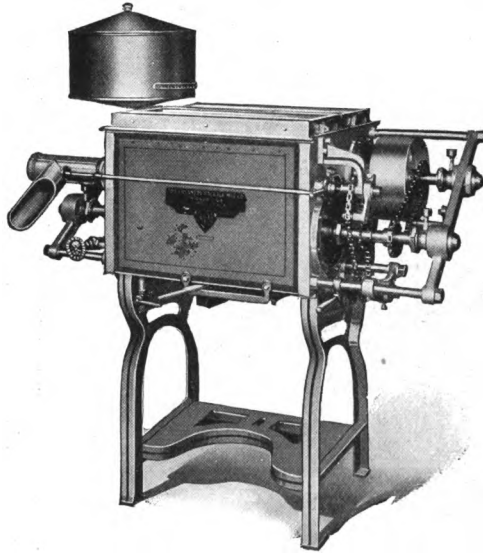
All disc freezers can be used to freeze batches, if so desired. In operating as batch freezers the upper worm is not used. The amount of mix for a batch is placed in the freezer and frozen to the desired hardness. Then with the lower worm in motion the bottom outlet is opened and the batch discharged directly into the packing can.

In operating two-compartment freezers one batch can be cooled in the upper compartment while the lower compartment is freezing. As soon as the first batch is frozen and discharged, the gate from the upper compartment is raised, and the thoroughly chilled cream passed into the lower compartment to be finished. In this way it requires but five or six minutes to freeze a batch. The two-compartment freezer is in reality two freezers in one, a fact that should be borne in mind in making comparisons.

A valuable feature of the Disc Freezer, and one that adds to its all-around usefulness, is that any amount of cream, from two gallons up, can be frozen. Even in the largest machine, which, when operated at full capacity, will deliver up to 200 gallons of cream per hour, as small a quantity as two gallons of cream can be made at one time if desired.



## Disc Continuous Freezers



### Two-Compartment Freezers

Can be operated either continuous or as batch freezers. Furnished for brine from refrigerating machine, or with brine tank and pump for salt and ice brine. Made in three sizes, as follows:

#### Size C

Capacity 80 to 100 gallons per hour.

Can be operated either continuous or as a batch freezer.

Capacity per batch 2 to 5 gallons.

Operated at full capacity two of these freezers are equal to three of any other make.

Approximate shipping weight, 900 lbs. Prices on application.

#### Size D

Capacity 100 to 130 gallons per hour.

Can be operated either continuous or as a batch freezer.

Capacity per batch 2 to 7 gallons.

Operated at full capacity this freezer is equal to two freezers of any other make.

Approximate shipping weight, 950 lbs. Prices on application.

#### Size E

Capacity 150 to 200 gallons per hour.

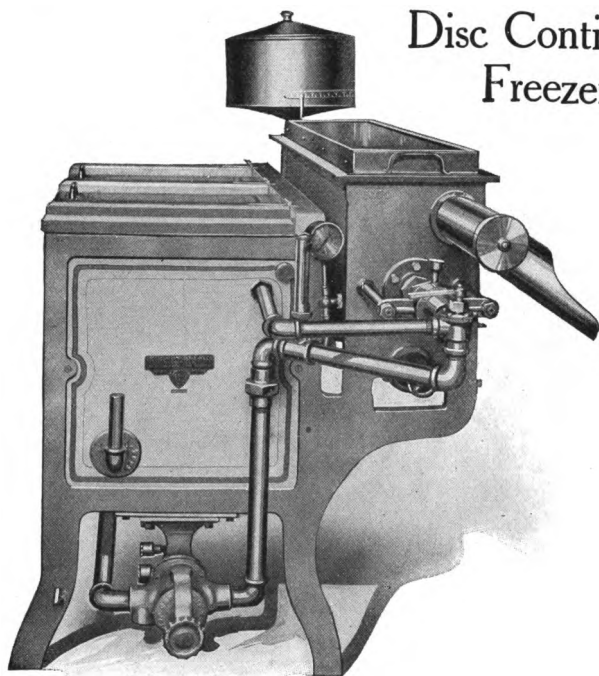
Can be operated either continuous or as a batch freezer.

Capacity per batch 2 to 10 gallons.

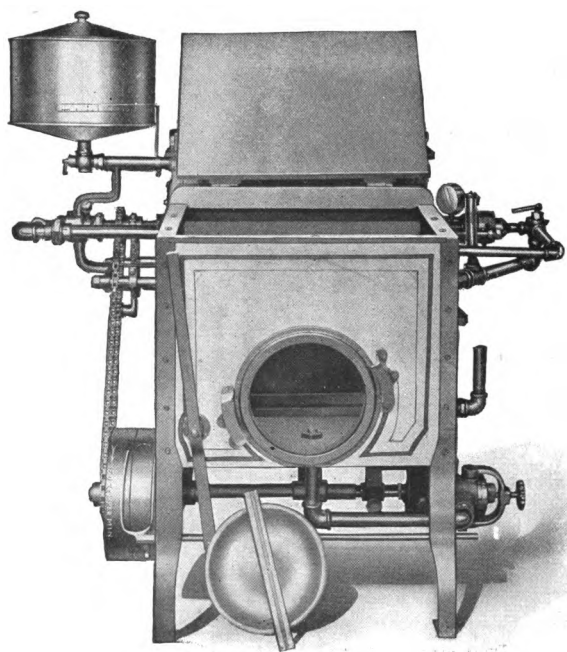
Operated at full capacity this freezer is equal to three to four freezers of any other make.

Approximate shipping weight, 1070 lbs. Prices on application.

## Disc Continuous Freezers

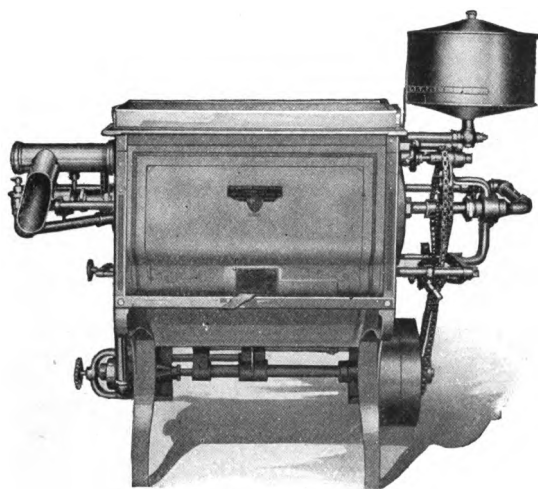


This is a side view of the combined freezer, brine tank and pump. This makes a very compact, space - saving outfit where ice and salt brine is used. We ship it complete ready to attach to the belt. No pipe fittings or connections necessary.



This view from the brine tank end shows the cover removed for cleaning out the sawdust, shavings and sediment which collects in the tank. Brine tanks are supplied with removable screens.

## Disc Continuous Freezers



Size A

### SIZE A.

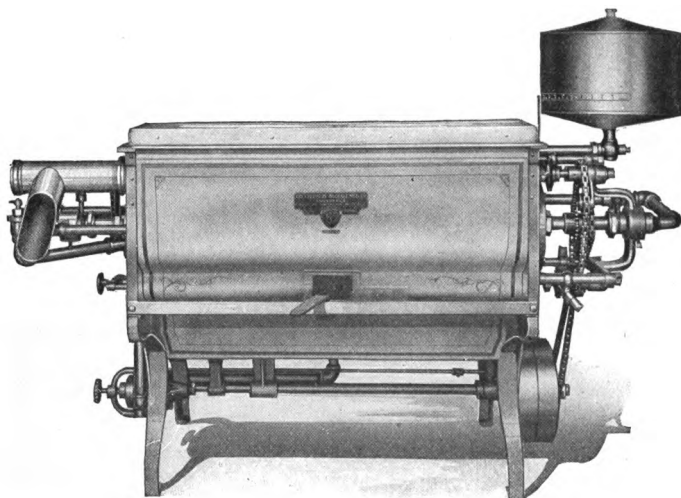
Combined freezer, brine-making tank and rotary brine pump. No pipe fitting necessary to install, and only one belt required.

Capacity 30 to 40 gallons per hour. Can be operated either continuous or as a batch freezer.

Capacity per batch, 2 to 5 gallons.

Approximate shipping weight, 740 lbs.

Prices on application.



Size B

Capacity 50 to 70 gallons per hour. Can be operated either continuous or as a batch freezer.

Capacity per batch, 2 to 10 gallons.

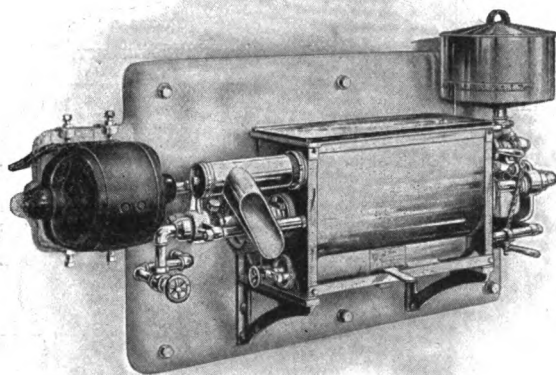
This is combined freezer, brine-making tank and rotary brine pump.

Shipped complete ready to install; no pipe fitting necessary; only one belt required.

Prices on application. Approximate shipping weight, 900 lbs.

**Size B. B.**—Same size as B, but does not have the continuous attachments and can be used only as a batch freezer. Capacity 50 to 60 gallons per hour. Approximate shipping weight, 900 lbs. Prices on application.

## Disc Freezer With Wall Plate



The illustration herewith is of a Disc Freezer mounted on special wall board or plate of enameled cast iron. Provision is also made for the motor, and the entire outfit is compact and convenient. This type of rig is especially adapted to hotels, restaurants, department stores and other establishments having mechanical refrigeration. The brine pipes are carried through or into the wall, and there is nothing visible to detract from the perfectly sanitary appearance. Where ice machine brine is not available, this style of freezer can still be used by

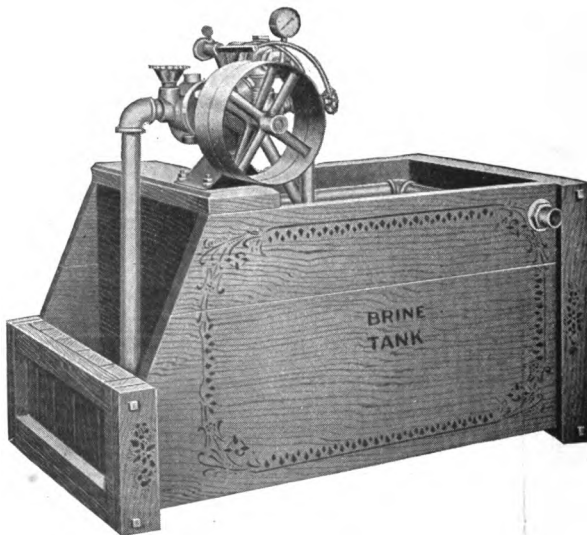
installing a separate brine making tank and pump, which may be placed in another room, or even at some distance from the freezer, if necessary. This machine is our A size, having a capacity of 30 gallons per hour continuous, and 20 to 30 gallons in batches. From 2 to 5 gallons can be frozen per batch.

Complete specifications and prices will be given upon application.

## Brine Tanks

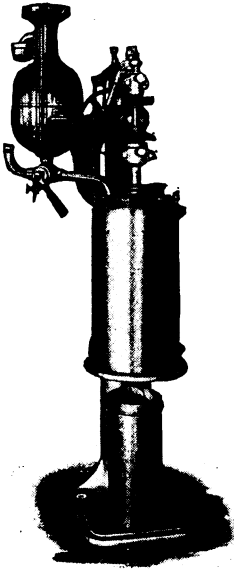
### For Freezers, Milk Coolers, Etc.

Made of cypress. Pump and piping are included, also strainer, but no pressure gauge, which is furnished to order only, and at an extra charge. The sizes listed are suitable for Disc Freezers of corresponding size number.



Size.	Height.	Length.	Width.	Weight.	Price.
C	24 in.	48 in.	25½ in.	360 lb.	\$50.00
D	24 in.	48 in.	30½ in.	420 lb.	60.00
E	24 in.	48 in.	40½ in.	480 lb.	70.00

## The Collins Vertical Freezer



Improved cylinder construction, made of heavy German silver lining, brazed not riveted. It is almost impossible to detect where cylinder is joined together. Cylinder is absolutely round so that scraper touches every bit of the surface. Lining is surrounded by heavy copper coil brazed to the lining, doing away absolutely with all leakage of brine caused by brine eating solder. Cylinder insulated with 1 inch of insulating material, much heavier than any other freezer. Outside shell of cylinder is copper, tinned on both sides and brazed.

The Dasher is constructed entirely of brass; several times as heavy as any other dasher made, so that it acts as a fly wheel in maintaining a set speed. The two blades or scrapers are hinged and set at an angle of 45 degrees so that inner surface of cylinder is always kept clear of cream freezing onto metal.

This is a very heavily built, handsomely finished machine. It is fitted throughout with brass bushings.

The illustration shows a regular style measuring pot made of spun copper, with sight glass for accurately gauging the quantity of mix. This style pot is intended for feeding from an overhead supply.

In operating, the three-way cock is opened, allowing the mix to run into the pot and up into the narrow neck. When it reaches the desired height turn the cock, allowing the mix to flow into the freezer. One batch can be measured out while another is freezing. The frozen cream is ejected through the bottom outlet and the outlet valve works on ball bearings.

Where this measuring pot is not wanted, and where the mix is to be emptied into the freezer by a pail, we can furnish a low supply can, located at convenient height for filling.

The sight glass in the top of the freezing cylinder is a convenience that will be appreciated. This glass is set in a nicked brass casting which also contains a funnel for adding fruit, etc., and is so pivoted that either the glass or the funnel may be turned over the opening.

The machine has a capacity of 12 gallons finished cream to a batch.

Each machine is fitted with friction clutch pulley  $11\frac{1}{2}$  inches by 4 inches; 210 revolutions per minute.

Prices on application.

## Power Ice Cream Freezers



**The Champion**  
40 Qt. Size

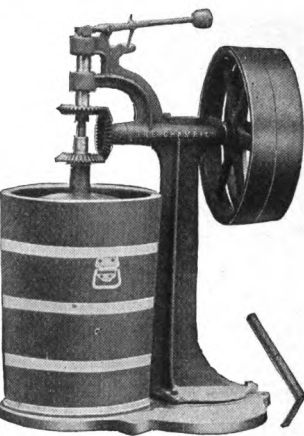
A medium price well built freezer. Perfectly rigid frame; babbitted boxes. Handle for each machine.

Entire weight, 600 lbs.; power, 2 horse; floor space, 32x38 inches; height, 53 inches over all; pulleys, 24 inches diameter,  $3\frac{1}{2}$  inches face, one tight, one loose. The tight pulley is a combined pulley and fly-wheel, giving more belt surface and avoiding all danger of belt slipping. Gears, 7 inches diameter.

Complete for power (two pulleys).....\$.....

Extra apparatus, consisting of cedar machine tub, copper can, beater, cover and cover gear complete.

Prices on application.



**The Reliable**  
40 Qt. Size

Has improved plunger lift, genuine babbitted boxes with oil retainer, beater shaft of best steel full length of beater, scrapers of best sheet metal and flexible; can, heavy gauge copper, heavily tinned inside; heavy, four-hooped, dove-tailed, level-bottom, well-seasoned cedar tub, with malleable iron handles and bunghole protector.

Entire weight, 500 lbs.; power, 2 horse; floor space, 32x28 inches; height, 48 inches; pulleys, 20 inches in diameter,  $3\frac{1}{2}$  inches face, tight and loose; gears, 7 inches in diameter.

Complete for power (two pulleys).....\$.....

Extra apparatus, consisting of cedar machine tub, copper can, beater, cover and cover gear complete.

Prices on application.

**The Combination**

40 Qt. Freezer and Crusher Combined

Can also be furnished in 20-qt. size. The ice cream freezer of the Combination is the same as the Champion Freezer in every respect.

The crusher is made of heavy casting and very strong; will take cake of ice 10 inches thick, 14 in. wide or smaller.

The drum is 12 inches in diameter and 15 inches wide, and has 9 steel teeth, which are fitted in dove-tail. Teeth can be taken out and replaced easily by anybody.

The machine is furnished with a 24-inch diameter x  $3\frac{3}{4}$ -inch face fly-wheel and pulley. The tight pulley is a combined pulley and fly-wheel, giving more belt surface and avoiding all danger of belt slipping, therefore giving a strong, positive and continuous power.

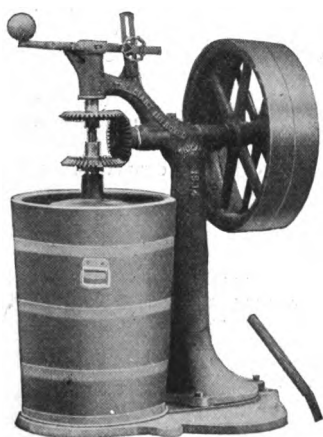
Entire weight, 1,000 pounds. Power, 2 horse. Floor space, 36 inches x 52 inches. Height, 48 inches over all. Fly wheel and pulley, 24 inches diameter and  $3\frac{1}{2}$ -inch face.

Price, complete for power (two pulleys).....\$.....

Extra apparatus, cedar machine tub, copper can, beater, cover and cover gear, complete.....\$.....

Prices on application.

## Power Ice Cream Freezers



### Improved Giant

40 Qt. Size

Built especially for heavy work. Made with interchangeable parts. Bronze boxes do away with rebabbitting. Can be speeded from 75 to 225 revolutions.

Entire weight, 700 pounds. Power, 2 horse. Floor space, 32x38 inches. Height, over all, 55 inches. Pulleys, 26 inches diameter, 3 3/4 inches face, one tight, one loose.

Complete, for power (two pulleys).....\$.....

Extra apparatus, consisting of cedar machine tub, copper can, dasher, cover and cover gear, complete.....\$.....

The 20-quart apparatus can be made to fit the 40-quart Giant Improved Freezer.

Prices on application.

### The Perfect

40 Qt. Size

Entire weight, 725 pounds. Power, 2 horse. Floor space, 32x23 inches. Height, 58 inches over all. Pulleys, 12x3 inches.

Can be furnished with electric motor attached to freezer, which can then be set anywhere regardless of shafting.

Complete, for power.....\$.....

Extra apparatus, consisting of machine tub, copper can, dasher, cover and cover gear, complete.....\$.....

Prices on application.



### The Little Giant

20 Qt. Size

This machine is similar in construction to our 40-quart Giant Improved in every important part.

Entire weight, 225 pounds. Speed of machine, 75 to 100 revolutions per minute. Power, 1 horse. Floor space, 20x33 inches. Height, 3 feet 8 inches over all. Fly wheel, 28 inches in diameter. Pulleys, 12 inches in diameter, 3 3/4 inches face, tight and loose.

Gears, 5 inches in diameter. Can be operated by steam, electricity, gas or hand power. Handle with each machine.

Complete, for power (two pulleys).....\$.....

Complete, for hand power.....\$.....

Prices on application.

## Dana Power Freezer



Bearings for counter-shaft are of solid bronze; center gear is bushed with bronze, and will not rust nor wear. Counter-shaft bearings are set in ball sockets and gear frame is hinged to them. Driving shaft fitted with tight and loose pulley.

Tub and can are easily released so that no machinery is over tub and can; free for examination and removal.

Furnished with extra heavy tin or copper cans. Made in 25 and 40 quart sizes.

### Dimensions

	25 qt.	40 qt.
Tight and loose pulley, diameter.....	12 in.	16 in.
Speed, revolutions per minute.....	175	175
Height .....	36 in.	44 in.
Floor space, inches .....	20x35	38x30
Net weight, pounds .....	250	380
Crated for shipment, pounds.....	300	460

Net prices, f. o. b. factory, quoted on application. Can also furnish 40 quart machine with 11-3 H. P. alternating or direct current motor.

## The Sampson Power Freezer

The Sampson is one of the best power machines on the market. There is nothing made in the line of cheap freezers that approaches it for strength or wear. The platform and stand are of cast iron. The can and tub may be removed and replaced at will.

Fitted complete with tight and loose pulleys. Tin can only, furnished.

25 quarts, each....\$52.00      40 quarts, each....\$67.00



## The White Mountain (Hand) Triple Motion



This Freezer has three distinct motions. The can turns in one direction, opposite to which revolves the outside dasher with a double self-adjusting scraping bar and at same time an inside beater rod turns in the opposite direction to the outside dasher referred to, producing three simultaneous motions.

The gearing is covered, and all iron parts well galvanized. The can is made of best charcoal tin, and tub of water-proofed lumber, heavily bound with galvanized iron hoops.

### With Crank Only

Quarts.....	1	2	3	4	6	8	10	12	15	20	25
Each.....	\$3.50	4.00	4.75	5.75	7.25	9.35	12.50	14.50	17.75	23.75	29.00

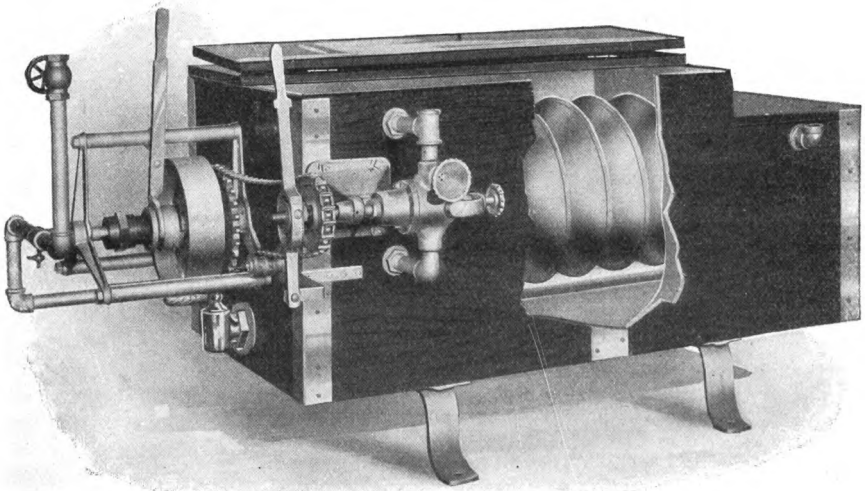
### With Crank and Flywheel

Quarts.....	12	15	20	25
Each.....	\$18.00	22.00	28.00	35.00

Prices on White Mountain Freezers subject to large discount.



# The Wizard Ice Cream Mixer



Plants making ice cream in a wholesale way find a special mixing machine a great advantage, saving labor, time and insuring uniformity.

The Wizard is a combination of mixer, cooler and storage tank. The illustration shows a 75-gallon size machine with pump attachment. The main feature of the machine is the cooling and mixing coil, which is made after the form of a hollow screw, the inner chamber forming a passage for the ice water or brine for cooling. The spiral coil when in motion operates to move the entire contents of the vat. The general direction of the current is from end to end, but there are also set up counter currents that set the whole mass in motion, give the surface the appearance of a boiling mass, which quickly effects a complete intermixing of all the ingredients.

The Wizard mixer is constructed of the best material, Gulf Cypress jacket, cold rolled tinned copper lining and copper coil. The new model is insulated between the jacket and lining, increasing its value as a storage vat.

Regular machines are belted to pulley on main shaft, as illustrated, but when wanted we can furnish with spur and worm gear to belt at right angles.

## Wizard Mixers

### Without Pumps

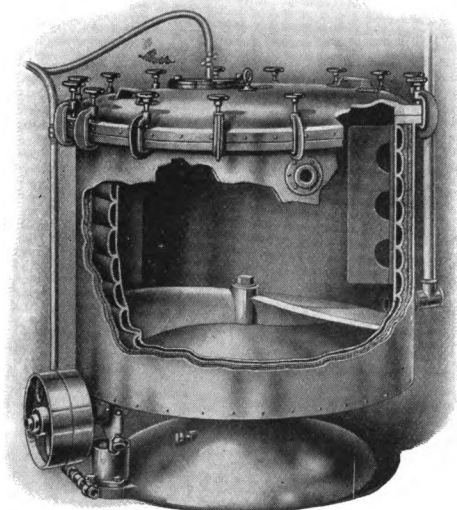
	75 Gallons	100 Gallons	200 Gallons
Price.....	\$165.00	\$216.00	\$300.00

For prices on larger sizes, see Wizard Agitators, page 40.

### List of Pumps

Circulating pump for cooling medium, with necessary attachments.....	\$25.00
Cream elevating pump, with sanitary fittings and attachments.....	35.00

## Alaska Ice Cream Mixer



Sectional illustration of Alaska mixer, showing insulation, brine coil and agitator.

### General Construction

Extra heavy copper, tinned inside and out, with brazed joints. Cover is made from hammered copper and fitted with manhole so that the large cover need be removed only for cleaning the Mixer. Base of machine is solid cast iron with copper lined sloping bottom fitted with sanitary outlet. Top rim is made of brass, heavily tinned. When desired this machine is fitted with air pressure pump complete with all connections including regulating valve for elevating cream from mixer to freezer. Agitator is made of bronze heavily tinned and so constructed that it will absolutely mix sugar and other ingredients. The propeller fits closely over the entire bottom and three inches up the sides so that there are no pockets for sugar to lodge in.

### Style "A"

Gal.	Dia.	Hgt.	Weight.	Price.
100	40"	46"	1,000 lbs.	\$300.00
150	40"	58"	1,250 lbs.	350.00

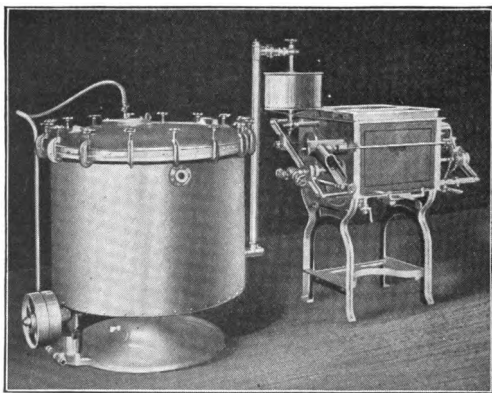
### Style "B"

Gal.	Dia.	Hgt.	Weight.	Price.
100	40"	46"	1,000 lbs.	\$350.00
150	40"	58"	1,250 lbs.	400.00

If wanted with brine coil add \$25.00 to list price in either style or size.

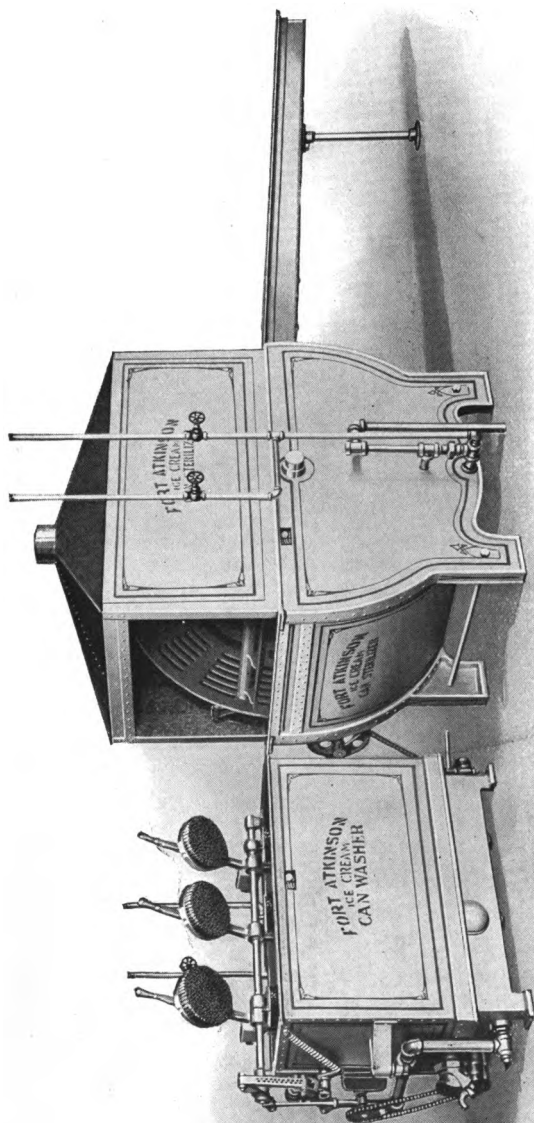
Style "A" is plain machine for use on gravity plan.

Style "B" has air tight clamp cover and air pump to discharge machine when set on same level as freezer.



Style B mixer and freezer as operated on single floor level.

## Fort Atkinson Washer and Sterilizer



This illustration is of the No. 3 power driven washer and automatic rotary sterilizer.  
For description see following pages.

# Fort Atkinson Washer and Sterilizer

## The Modern Way of Washing and Sterilizing Ice Cream Packing Cans

Progressive ice cream men now pay more attention to the fine points of the business than ever before, knowing that one of the safeguards of reputation is to have every operation in the manufacture and distribution absolutely above reproach from a hygienic standpoint.

Packing cans must be washed each time they are used. In a plant doing any considerable volume the expense for this work is large and furthermore the results are often unsatisfactory owing to the difficulty of securing competent labor. Of can washing machines there are plenty, but until the Fort Atkinson machines were brought out, no successful attempt had been made to provide machinery for completely cleansing and sterilizing the cans in a scientific manner.

These two machines are made to be used together, but either may be used separately if desired. We show on the next page a cut of the hand operated rotary sterilizer and a description of the operation.

### Description of the Fort Atkinson Washer

It consists of an all-metal galvanized tank with a heavy cast iron bottom. Inside the tank one or more vertical rotary brushes are mounted on spindles driven by gearing underneath the tank. Special brushes are provided for the outside and bottoms of the cans and a system of water circulation consisting of a rotary pump built in and driven by roller chain from the main shaft forces water against the brushes and can. The operator grasps the can, turns it upside down and over the revolving brush. This washes the can inside. After a few revolutions of the brush the can is released and revolves with the brush. The side and bottom brush is then brought into use by the single act of drawing down the lever. The actual operation of washing a can is simple and takes less time than to explain how it is done.

### Advantages

**FIRST:** This is the only washer that washes the inside, outside and bottom of the can at one operation.

**SECOND:** On account of machine being vertical it takes up about one-fourth the floor space of any other type of ice cream can washers which are of the horizontal type.

**THIRD:** The brushes are full length so that the can need not be held in any certain position in order to be thoroughly washed.

**FOURTH:** Brushes are fed with a water spray from the circulating pump, and do not become sticky and mat down on account of a lot of grease sticking to them.

**FIFTH:** Cans are more thoroughly washed, especially so in the corners of the cans, also the edges and around the hoops and bands. Naturally, cans with dents or imperfections cannot help but be thoroughly washed on account of the pressure that can be put against the can from the outside brush.

**SIXTH:** Any horizontal brush washer is hard to handle because the tank in which the brush is placed must be twice the width of the largest can to be washed, so that the operator stands in a most unnatural position when washing cans.

**SEVENTH:** The vertical can washer is very easy to operate, does not over-

tax the operator, makes the work more pleasant, and is the only machine with which a man with ordinary intelligence can be kept at work, because there is no job that is so hard as washing cans in the old way, and it is next to impossible to keep a reasonably good man at this job.

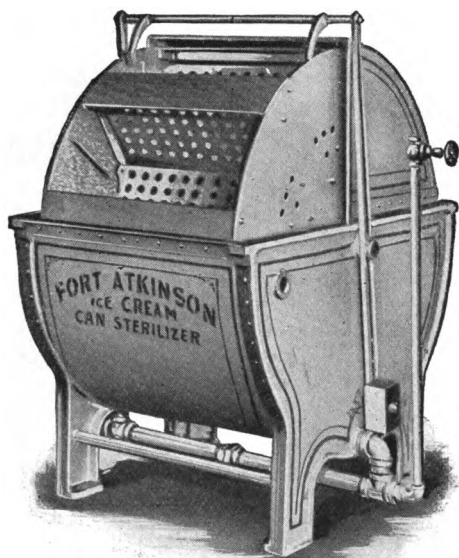
**EIGHTH:** One man can wash two cans on the two and three brush machines, or two men can work on the same machine.

**NINTH:** This machine is built exceptionally strong and durable, regardless of the fact that by using vertical brushes the strain on the spindle is much less than on horizontal brushes.

**TENTH:** The brushes are of our own manufacture, special material is used, and they are high grade brushes. The top brush which is subjected to the greatest wear can be refilled, making the cost of new brushes very reasonable.

**ELEVENTH:** The brushes on these machines are all interchangeable. This enables the purchaser, having a No. 1 machine only, by having extra brushes, to wash all sizes of cans. The brushes can be changed very quickly and the moderate sized factory can purchase a machine and get the benefit of it as well as the very large manufacturers,

# Fort Atkinson Washer and Sterilizer



## The Sterilizer

A necessary part of the cleansing process is the sterilizing of the cans. With the Fort Atkinson Sterilizer, the cans are thoroughly sterilized without any special attention whatever. It consists as the illustration shows of a half-round tank inside of which is a rotatable can-receiving device. On the hand operated machine the cans are placed in the compartments as washed and the operator simply pulls the hand lever down, carrying the can into the hot water and bringing the next compartment into position for the next can. The shelves are so fixed that the cans drain dry before being removed from the machine.

## Advantages

**FIRST:** Water at a temperature of from 190° to 210° F. is more effective in bacteria destruction than live steam unless steam is applied to a can when the can is in an oven that permits of a steam pressure of several pounds.

**SECOND:** Takes all sizes of cans from four quarts to forty quarts and handles brick molds and all utensils commonly used in an ice cream factory. There is nothing else made to sterilize ordinary utensils. It not only sterilizes the cans and utensils, but also the covers.

**THIRD:** Requires about one-third

the room of a table with steam jets.

**FOURTH:** Saves time for the operator because he is not compelled to wait for the can to be sterilized. The cans are being sterilized while the washing is going on.

**FIFTH:** All the cans are drained, and before they are raised to a position where they are taken out they have had sufficient time to become bone dry. This is important because it saves the can from rusting. The greatest loss in cans is not from wear, but on account of becoming so rusty they are not fit to use.

## Automatic Sterilizer

**FIRST:** No attention is necessary by the operator as the cans are submerged, drained, dried and automatically discharged on an inclined table where the cans roll into the ice cream freezing

room, and the labor of carrying the cans is avoided.

**SECOND:** This machine is driven by power from a sprocket wheel on the washer, so that no manual labor is required for driving it.

## Prices

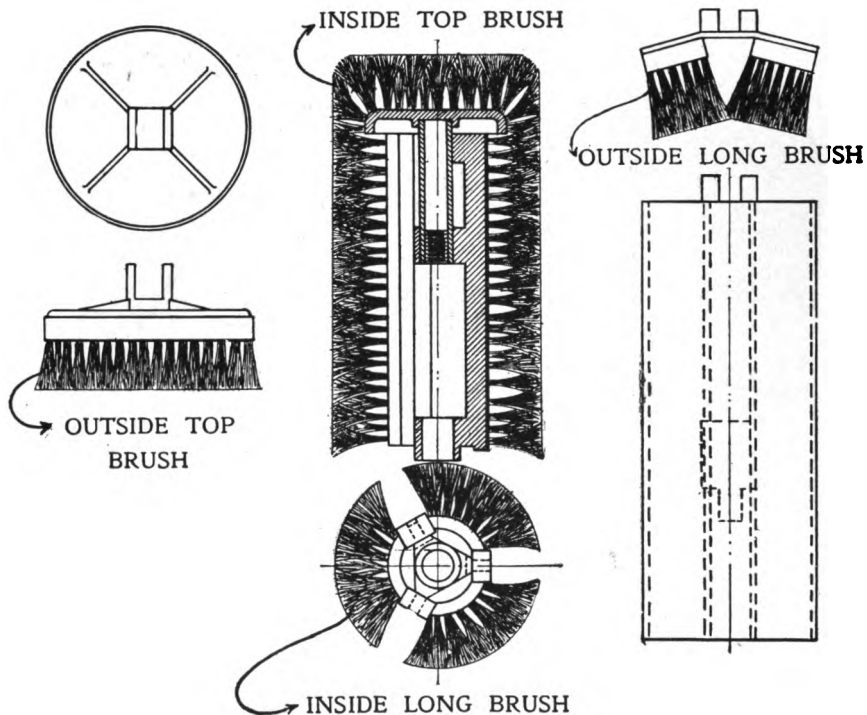
No. 1 Washer, weight 1100 lbs., one brush.....	\$200.00
No. 2 Washer, weight 1300 lbs., two brushes.....	300.00
No. 3 Washer, weight 1700 lbs., three brushes.....	425.00

Equipment: The machines are furnished with one, two or three brushes as above. Brushes may be of any regular size or sizes desired (see list on next page.) By having extra brushes any size cans may be washed on the single brush machines. Brushes are easily changed.

Hand-operated Sterilizer for No. 1 or No. 2 Washer, as illustrated, weight

1100 lbs. ....	\$125.00
Can Sterilizer with power attachment and automatic delivery.....	400.00

# Ice Cream Can Washer Brushes



## BRUSH TABLE

1 1/2 INCH DIAMETER BRUSH				
Will Wash 40, 32, 24 and 20 Quart Cans of Standard Catalog Diameter.				
Price for Re-filling Inside Top Brush ... <b>\$6.25</b>	Name	No. Required	List Each	Complete Cost Inside Brush with Bronze Holder Price ... <b>\$30.00</b>
	Inside Long Brush.....	3	\$ 2.50	
	Inside Top Brush.....	1	12.50	
	Outside Long Brush....	2	1.50	
	Outside Top Brush.....	1	2.00	
9 1/2 INCH DIAMETER BRUSH				
Will Wash 20, 16 and 12 Quart Cans of Standard Catalog Diameter				
Price for Re-filling Inside Top Brush ... <b>\$4.00</b>	Name	No. Required	List Each	Complete Cost Inside Brush with Bronze Holder Price ... <b>\$23.00</b>
	Inside Long Brush.....	3	\$2.00	
	Inside Top Brush.....	1	8.00	
	Outside Long Brush....	2	1.50	
	Outside Top Brush.....	1	2.00	
7 1/2 INCH DIAMETER BRUSH				
Will Wash 8, 6 and 4 Quart Cans of Standard Catalog Diameter				
Price for Re-filling Inside Top Brush ... <b>\$3.00</b>	Name	No. Required	List Each	Complete Cost Inside Brush with Bronze Holder Price ... <b>\$13.00</b>
	Inside Long Brush.....	3	\$1.00	
	Inside Top Brush.....	1	6.00	
	Outside Long Brush....	2	1.50	
	Outside Top Brush....	1	1.50	
5 1/2 INCH DIAMETER BRUSH				
Will Wash 3, 2 and 1 Quart Cans of Standard Catalog Diameter				
Price for Re-filling Inside Top Brush ... <b>\$3.00</b>	Name	No. Required	List Each	Complete Cost Inside Brush with Bronze Holder Price ... <b>\$13.00</b>
	Inside Long Brush.....	3	\$1.00	
	Inside Top Brush.....	1	6.00	
	Outside Long Brush....	2	1.50	
	Outside Top Brush....	1	1.50	



## Ice Cream Packing Tubs

Made of Virginia White Cedar, bound with heavy galvanized iron hoops, with stamped steel handles securely fastened to the tub. Nicely painted inside and outside with the best paint. Of course it is a well known fact that there is no wood so well suited for resisting brine as Virginia White Cedar.

QUARTS	INSIDE TOP DIAMETER, INCHES	INSIDE BOTTOM DIAMETER, INCHES	INSIDE DEPTH, INCHES	PRICE
1	7½	6½	7¾	\$0.60
2	8½	7½	9¾	.70
3	9	8	12¾	.85
4	10	9	13¾	1.15
6	10½	9½	17	1.40
8	11½	10½	17½	1.65
12	12½	11½	19	1.95
16	13¾	12½	23	2.60
20	15½	14	24	3.25
24	16	14½	24¼	3.85
32	17¼	16	26¼	4.40
40	18½	16½	29	5.00

Galvanized Wire Bails on 1 to 6 quarts, inclusive.

Galvanized Side Handles on 8 to 40 quarts, inclusive.

WRITE FOR DISCOUNTS.

### Plugs for Tubs

No. 1—Small end... ¾ in. Large end.....1 in. Length .....2 in.  
 No. 2—Small end... ⅞ in. Large end.....1¼ in. Length .....2½ in.  
 No. 3—Small end...1 in. Large end.....1½ in. Length .....2¾ in.  
 No. 4—Small end...1¼ in. Large end.....1¾ in. Length .....2 in.  
 Price, per 100, any size.....\$1.00 Per 1,000, any size.....\$8.00

## Ice Cream Carry Out Pails

These pails are made of Virginia White Cedar—the best wood known for resisting the deleterious action of brine.

They are nicely painted inside and out with best green paint, are hooped with Galvanized Electric-Welded Wire Hoops sunk in grooves in the staves. Each pail is finished with strong galvanized wire bail with wood handle.

They are light, strong and durable, and very handy.

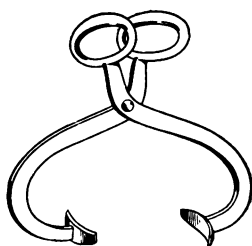
Made in Three Sizes.

Size .....	2 Quarts	3 Quarts	4 Quarts
No. Hoops.....	2	2	3
Price, per dozen.....	\$3.35	\$3.40	\$5.40

Write for Discounts.



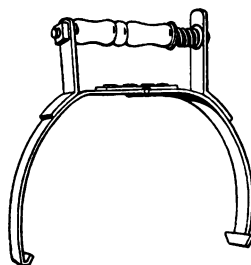
## Packing Can Handling Devices



**Plain Tongs**

You can carry any size ice cream can, empty or full, with these tongs, without touching your hands to the can. Hand forged.

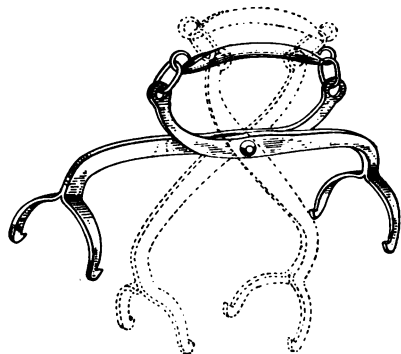
Price, per pair.....\$2.25



**"Sure Grip" Carrier**

No points to dent cans; a shoe catching under rim does the work. The more you pull the more it grips the can. Only one hand required.

Price, each.....\$1.50



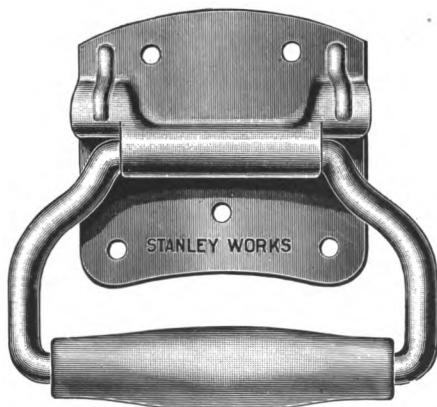
**The Never-Slip Puller  
and Carrier**

Will clamp, pull and handle any size can from 4 to 40-qt. Can be handled with one hand. Impossible for can to drop out. Every wagon should have a set.

1 pair .....	\$ 2.00
6 pairs .....	11.00
12 pairs .....	21.00

## Packing Tub Handles (Rust Proof)

(Cuts are one-half size.)



No. 1212. For 20 and 40-qt. tubs.  
Per dozen pair.....\$1.90

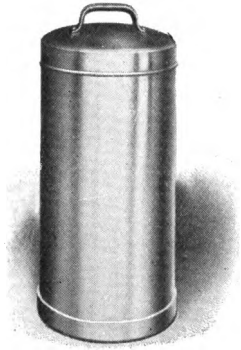


No. 1218. For 8 to 12-qt. tubs.  
A smaller handle without grip, but  
in every detail of superior grade.  
Per dozen pair.....\$1.40



# Ice Cream Packing Cans

## Round Bottom and Perfect Styles



Round Bottom

Made of best material; stamped one-piece bottom and covers. All parts hand-tinned, double coated to a mirror finish. Cylinder joint is riveted, soldered, and rivets carefully covered. All seams floated. No raw edges exposed to action of brine. Our cans must be seen and compared with others in order to appreciate the better value offered. "Perfect" Packing Cans stand without tipping, yet have all the advantages of the round bottom.



Perfect Style

QUARTS	STYLE BOTTOM	SIZE—INCHES	WEIGHT—LBS.	PRICE
1	Round	3 $\frac{3}{4}$ x 5 $\frac{1}{8}$	1 $\frac{1}{2}$	\$0.60
2	"	4 $\frac{1}{8}$ x 6 $\frac{3}{8}$	2 $\frac{1}{4}$	.75
3	"	4 $\frac{1}{8}$ x 9 $\frac{5}{8}$	2 $\frac{3}{4}$	.85
4	Perfect	5 $\frac{3}{8}$ x 10 $\frac{3}{4}$	3 $\frac{3}{4}$	.95
6	Round	5 $\frac{7}{8}$ x 12 $\frac{3}{8}$	4 $\frac{3}{8}$	1.10
8	Perfect	6 $\frac{1}{2}$ x 13 $\frac{7}{8}$	5 $\frac{1}{4}$	1.20
12	"	7 $\frac{1}{8}$ x 15 $\frac{5}{8}$	7 $\frac{1}{4}$	1.50
16	Round	7 $\frac{3}{4}$ x 19	8 $\frac{3}{4}$	1.70
20	Perfect	8 $\frac{1}{8}$ x 20 $\frac{3}{8}$	12	2.00
24	Round	9 $\frac{5}{8}$ x 18	13	2.50
32	"	10 $\frac{1}{8}$ x 21 $\frac{1}{4}$	15 $\frac{1}{2}$	2.75
40	Perfect	11 $\frac{1}{8}$ x 24 $\frac{1}{8}$	19	3.25

WRITE FOR DISCOUNTS

## Light Packing Cans

Made of extra heavy tin with additional galvanized iron bottoms

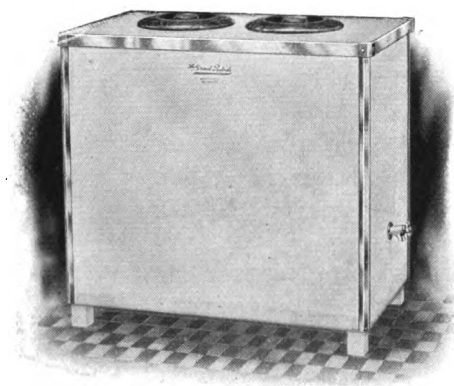
Warranted first class

1 quart.....	each, \$	.30
2 ".....	"	.40
4 ".....	"	.55
6 ".....	"	.65
8 ".....	"	.75
12 ".....	"	1.00
16 ".....	"	1.25
20 ".....	"	1.40
25 ".....	"	1.60
30 ".....	"	1.85
40 ".....	"	2.00

These cans are made of extra heavy tin of superior quality, they are re-inforced with an additional bottom made of galvanized iron, the covers are raised and the handles are made of malleable iron, riveted and soldered to the covers.

WRITE FOR DISCOUNTS

## Ice Cream Cabinets



**White Porcelain Enamel Cabinet,  
Style No. 1**

Outside case white porcelain enamel steel, top is of linonite, a special composition material, best material known for ice cream cabinet top. Trimmed with highly polished German silver corner irons. Insulated with 2-inch nonpareil cork board sides, 3-inch cork bottoms. Lining special salt water-resisting galvanized metal, guaranteed to last five times as long as galvanized iron.

	No. of Cans	Capacity Gal.	Length in.	Width in.	Height in.	Weight Crated	Price
115-E	1	5	21	21	32	180	\$28.00
125-E	2	5	21	34	32	245	42.00
135-E	3	5	21	46	32	320	60.00

These prices include cylinders.\*

## Ideal Cabinets, Style No. 5-G



Latest improved Grand Rapids Ice Cream Cabinet. Outer casing made of cedar. Is made very smooth, making it very cleanable. It is highly finished in golden oak. Top is flush with rim and covers wearing surface of the rim. Top being flat, has a big working surface. Very strongly built. Lining tapers at the bottom, giving more insulation space at the bottom. Insulated with non-pareil granulated cork and lined with special salt-resisting galvanized metal. Guaranteed to last five times as long as galvanized iron.

	No. of Cans	Capacity Gal.	Length in.	Width in.	Height in.	Weight Crated	Price
512-G	1	2	19 $\frac{1}{8}$	19 $\frac{1}{8}$	24 $\frac{1}{4}$	85	\$12.00
522-G	2	2	28 $\frac{1}{2}$	19 $\frac{3}{8}$	24 $\frac{1}{4}$	125	19.00
532-G	3	2	38 $\frac{1}{2}$	19 $\frac{3}{8}$	24 $\frac{1}{4}$	175	24.50
513-G	1	3	21	21	30 $\frac{1}{4}$	130	14.50
523-G	2	3	21	32	30 $\frac{1}{4}$	174	21.50
533-G	3	3	21	43	30 $\frac{1}{4}$	230	28.00
515-G	1	5	21 $\frac{3}{4}$	21 $\frac{3}{4}$	30 $\frac{1}{4}$	140	16.00
525-G	2	5	21 $\frac{3}{4}$	35 $\frac{1}{4}$	30 $\frac{1}{4}$	205	24.50
535-G	3	5	21 $\frac{3}{4}$	47 $\frac{1}{2}$	30 $\frac{1}{4}$	275	32.00

These prices include Cylinders.\*

# Ice Cream Cabinets

## Paneled Cabinet Style No. 2

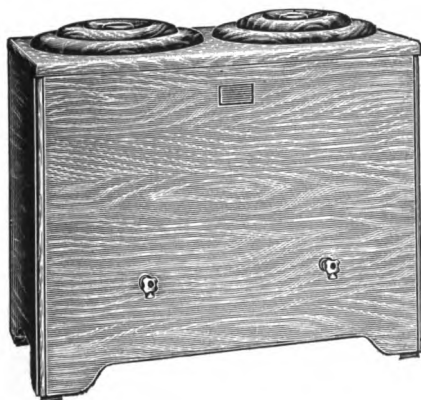
Made of selected oak with quarter-sawed oak panels, well constructed, highly finished in golden oak. Insulated with 2-inch nonpareil cork board and water-proof insulating paper. Lining, a special salt water-resisting galvanized iron.



No.	No. of Cans	Capacity Gals.	Length, inches	Width, inches	Height, inches	Weight, Crated	Price
212	1	2	17½	17½	21½	90	\$18 00
222	2	2	80	19½	22½	150	22 00
232	3	2	40	19½	22½	200	29 00
213	1	3	20½	20½	26½	125	17 00
223	2	3	32	21	26½	190	28 00
233	3	3	43	21	26½	238	35 00
215	1	5	21½	21½	28½	100	21 00
225	2	5	35	21½	28½	185	35 00
235	3	5	47	21½	28½	300	43 00
2110	1	10	24½	24½	34½	212	26 00

The above prices include Porcelain Cans, Galvanized Cylinders and Can Covers.\*

## All Wood Cabinets Size 4. Round Lining.



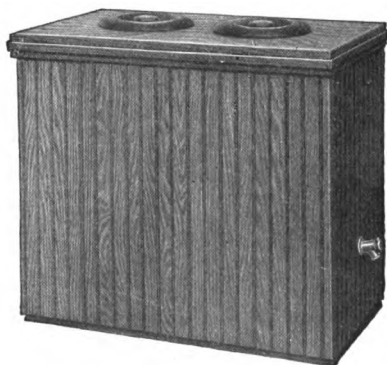
Outer casing of cypress; inner lining best Virginia cedar. Granulated cork insulation. Can be set side by side, making a sectional cabinet.

No.	No. of Cans	Capacity Gals.	Length, inches	Width, inches	Height, inches	Weight	Price
413	1	3	17½	17½	29½	75	\$14 50
423	2	3	33½	17½	29½	110	22 50
433	3	3	48½	17½	29½	140	29 00
415	1	5	19	19	31½	90	16 00
425	2	5	36½	19	31½	135	27 00
435	3	5	54	19	31½	190	36 00

These prices are less Cans and Cylinders.\*

\*Extras or allowance Cans: 2-gal. \$1.40; 3-gal., \$1.60; 5-gal., \$2.30; 10-gal., \$3.80. Cylinders: 2-gal., 55c; 3-gal., 65c; 5-gal., 85c; 10-gal., \$1.10.

## Ceiling Cabinet, Style 6



Georgia pine sides, and cypress top. Finished in golden oak insulated with 1½-inch thickness of granulated cork and waterproof insulating paper. Strongly constructed. Lined with special rust-resisting galvanized iron.

No.	No. of Cans	Capacity Gals.	Length, inches	Width, inches	Height, inches	Weight, crated	Price
613	1	3	20½	20½	27½	106	\$12 00
623	2	3	20	31½	27½	155	18 25
633	3	3	20	42½	27½	200	24 50
615	1	5	21½	21½	29	120	13 50
625	2	5	31	34	29	176	20 00
635	3	5	21	46½	29	235	27 00

These prices include Cylinders.\*

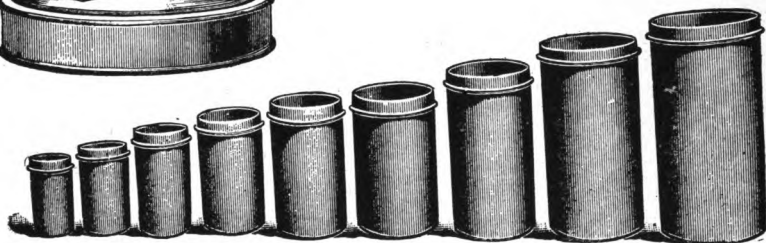
## Brick Ice Cream Cabinets

Same construction as above. Holds brick tank 8x14x22 inches high.

Price .....\$12.00  
Brick tank ..... 2.50

## Iron Enameled Cans

For Storing Ice Cream



Quarts.....	2	4	6	8	12	16	20	30	40
Price, each.....	\$0.75	1.20	1.40	1.85	2.20	2.65	3.00	4.00	4.65

WRITE FOR DISCOUNT.



## Carry-out Cans

Made of Extra Heavy Tin

Pints ....	1	2	3	4	5	6	8
Price, each	\$0.15	0.20	0.25	0.30	0.35	0.40	0.45

WRITE FOR DISCOUNT.

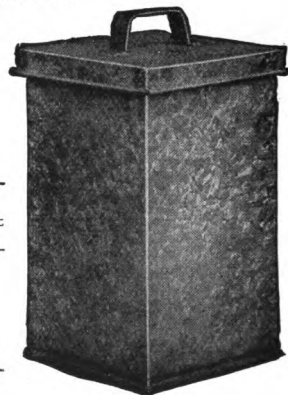
## Galvanized Brick Tanks

Made of Heavy Galvanized Steel

Reinforced at top with heavy band iron. Guaranteed not to leak.

Capacity	Length	Width	Depth	Price
2 quarts.....	7¼ in.	4 in.	6¼ in.	\$0.60
3 quarts.....	7¼ in.	4 in.	9 in.	.65
4 quarts.....	7¼ in.	4 in.	12¼ in.	.75
8 quarts.....	7¼ in.	7¼ in.	12¾ in.	1.15
12 quarts.....	10 in.	7¼ in.	15½ in.	1.35
20 quarts.....	10¼ in.	10¼ in.	19¼ in.	1.75
40 quarts ..	13¾ in.	10 in.	23 in.	2.50

WRITE FOR DISCOUNT.



## Ice Shovels



Galvanized steel, perforated.....each, \$1.50

## Ice Rammer

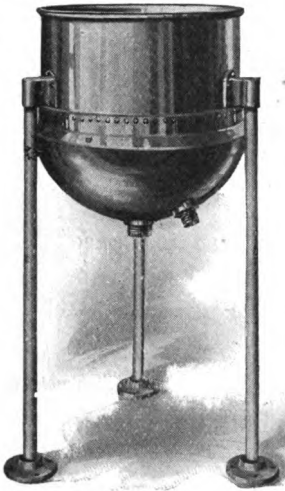
Head, 8½x3 inches.

Length, 29 inches.

Each ..... \$0.40



## Jacketed Copper Kettles



We are prepared to furnish copper kettles in any desired shape. The illustration is one of our standard steam jacketed kettles, which we furnish with special outlets as required.

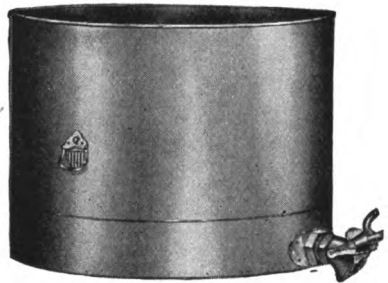
### Specifications

Size Gals.	Depth Inches.	Diameter Inches.	Draw-off Inches.	List Price
10	16	16	$\frac{3}{4}$	\$37.50
20	20	20	$\frac{3}{4}$	49.50
30	22	24	1	63.00
40	23	27	1 $\frac{1}{4}$	75.00
50	24	30	1 $\frac{1}{4}$	90.00
60	26	32	1 $\frac{1}{2}$	105.00
75	28	34	1 $\frac{1}{2}$	135.00

## Mixing Cans

These cans are strongly made of best quality XXXX tin plate; bottoms are slanting to facilitate draining. All cans fitted with 3-inch Perfection Gates.

Size.	Covers Price extra
40 gallons .....	\$10.00 \$3.00
60-gallons .....	11.00 3.75
80 gallons .....	13.00 4.25



### Mixing Can

Made of heavy tin, carefully soldered, wire bound at the top and banded at the bottom. One set of side handles at top, and one set about half way down.

10 gallon. Price, each.....	\$3.50
6 gallon. Price, each.....	3.00

### Seamless Tin Mixing Bowls

15 inches diameter. Each.....	\$1.25
17 inches diameter. Each.....	1.50
18 $\frac{1}{2}$ inches diameter. Each.....	2.00

### Double Boilers

Tin outside copper bottom, with removable enamel pan.

14-quart. Each .....	\$4.50
21-quart. Each .....	5.50

### Batch Mixer

Heavy wire handle, with perforated disc securely fastened; thoroughly tinned.  
Price, each .....

### Egg Whips

No. 0.	No. 1.	No. 2.
14 in. .... \$0.40	15 in. .... \$0.50	17 in. .... \$0.75

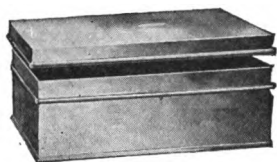
### Extract Graduates

See Glass Graduates on Page 307.

## Plain Brick Moulds

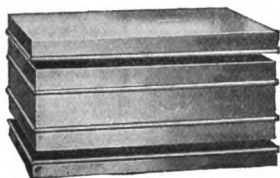
Made of Extra Heavy Tin

Very Strong and Durable



### Single Lid

Pints.....	1	2	3	4	5	6	8
Price, per dozen ..	\$3.00	\$3.60	\$4.20	\$4.80	\$6.00	\$7.20	\$8.40



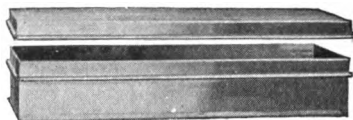
### Double Lid

Pints.....	1	2	3	4	5	6	8
Price, per Dozen ..	\$3.60	\$4.20	\$4.80	\$6.00	\$7.20	\$8.40	\$9.60

Write for Discount.

## Sectional Brick Moulds

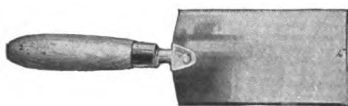
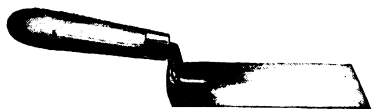
The 4, 6 and 8 quart molds are also called quick moulding bricks. A necessity for quick moulding. Bottom of mould is creased and contents are quickly cut into bricks of uniform size. Made of heavy charcoal tin. When specially ordered, moulds will be furnished with a hole punched in the bottom to facilitate removing the brick. Before filling, a strip of paper should be laid over the hole.



The one quart size is used extensively for serving cream in the form of individual bricks of uniform size, the mould being creased so that cream cuts without waste. Special sizes will be made to order.

4 quarts, creased for 4 equal parts. Price, each.....	\$0.85
6 quarts, creased for 6 equal parts. Price, each.....	1.25
8 quarts, creased for 8 equal parts. Price, each.....	1.40
1 quart, 10¾ in. long, 3 in. wide, 1¾ in. deep, creased for 5 or 6 equal parts. Price, per dozen.....	5.00

## Brick Mould Fillers



### Prices

Trowel handle, tinned blade, 8x3¾ in.....each,	\$0.40
Straight handle, tinned blade, 6x3¾ in.....each,	.40

## Can Scrapers



No. 1—Cast steel blades, 14 in. long, 1¼ in. wide; spring tempered....each, \$0.40

## Transfer Ladle



Used for transferring ice cream from one can to another.  
Extra strong. Shank and bowl in one piece.

Price .....each, \$0.75

## Dishing Spoons

Solid Brass—Nickel Plated

Each

No. 336—Round Spoon, 10½ in. long.....\$0.60

No. 336—Extra long handle .....75



## Heavy Forged Spoons

The bowl and shank are made of a single piece of forged steel, heavily coated with pure tin. The wood handle is securely held in its socket by means of rivets, which absolutely prevents its turning or loosening.



Pointed Bowl



Blunt Bowl

Length, inches .....	10	12	14	16	18
Price, either style .....	\$0.30	0.30	0.35	0.35	0.40

## Wood Ice Cream Paddles



Length, 46 inches; blade 4x10 inches.

This is the old style shape and is preferred by many ice cream makers to any other paddle. The blade is convex, both front and back. We make it only in hardwood.

Price, hardwood ..... each, \$0.40

## Scoops

Hardwood

Price, each.....\$0.40



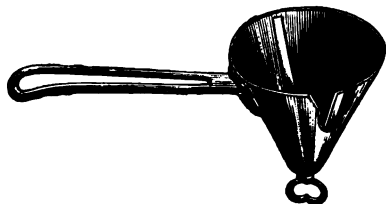
Hardwood Scoop

Aluminum

Will not rust or corrode.

Size, 4½x12 inches.

Price, each.....\$1.40



### C. P. Ice Cream Dish

Seamless drawn steel cups. German silver knives (not tin). Improved key fastening; will not get loose. Improved handle. Capacity guaranteed standard.

Capacity to quart....	4	5	6	8	10	12	16
Price, each.....	\$0.30	\$0.30	\$0.30	\$0.25	\$0.25	\$0.25	\$0.25

Add 6 cents when sent by mail.

### Trojan Cup Dish

Taken apart and put together without tools in an instant. Easiest and quickest to clean; no nuts, bolts or screws to bother with. Bowl and cleaner made of highest grade non-corrosive German silver; other parts are hardened bronze, smoothly polished and heavily nickel plated. In ordering, state size. Made in seven sizes: 6, 8, 10, 12, 16, 20, 24 to a quart. Each, \$1.50.



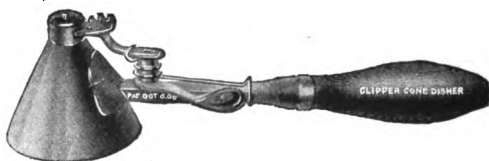
### Clipper Cup Dish



Made in six sizes: 6, 8, 10, 12, 16, 20 to a quart. Any size, \$1.50 each.

### Clipper Cone Dish

Very strong, works easily and cannot clog. Requires no tools of any kind, and cannot get out of order. Just lift the spring from the handle, then a quick twist and the disher is ready for cleansing. State size: 6, 8, 10, 12, 16, 20 to a quart. Price any size, \$1.50 each.



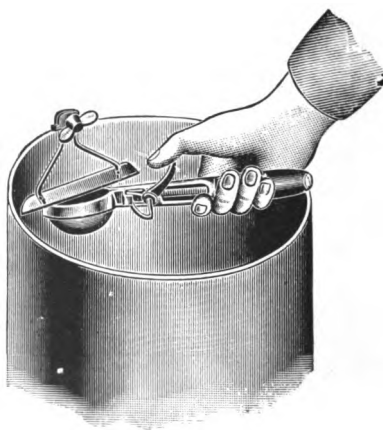
### The Gem Spoon



Sizes, 6, 8, 10, 12, 20 to a quart. Each, \$1.50.

### Unique Ice Cream Can Scraper

A most convenient article for the accurate filling of ice cream dishers. It is neat, easily attached, durable and can be cleaned with ease. Price, each, 75c.





## Monarch Ice Cream Pails

Guaranteed Full Measure. Solid Manila.



Made of one piece and absolutely slop-proof. When desired, these pails can be printed with name and address, in not less than 500 lots of a single size. Furnished with tape handles.

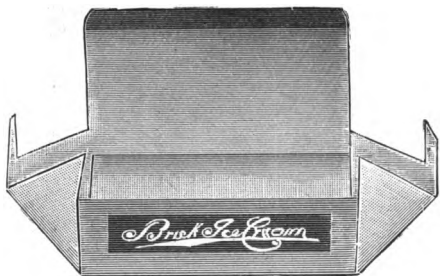
Sizes	Per 1000	Per 100
5-cent .....	\$4.00	\$0.45
10-cent .....	5.00	.50
Half-pint .....	5.00	.55
15-cent .....	5.50	.65
One-pint .....	6.00	.70
25-cent .....	7.50	.75
One-quart .....	8.00	.85
Two-quart .....	12.00	1.25

## Folding Brick Ice Cream Boxes

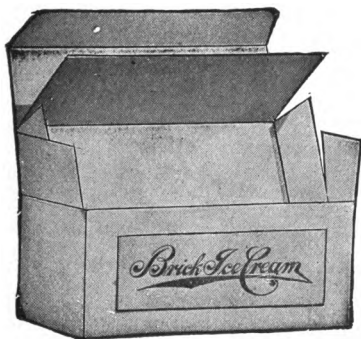
Made in one piece, waterproof paper, in the following sizes only:

	Per 1000	Per 100
1-pint .....	\$4.50	\$0.50
1-quart .....	5.50	.60

The above boxes are shipped flat, creased, ready for folding.



## Congress Folding Brick Ice Cream Boxes



This Folding Brick Ice Cream Box is made of one piece of solid Manila waterproof stock, and when set up is a solid box with double sides. It makes a very neat, substantial package, and superior in every way to the old-style folding brick ice cream packages. These boxes are shipped flat, 100 in a bundle.

	Per 1000	Per 100
1-pint .....	\$7.50	\$0.80
1-quart .....	8.00	.85

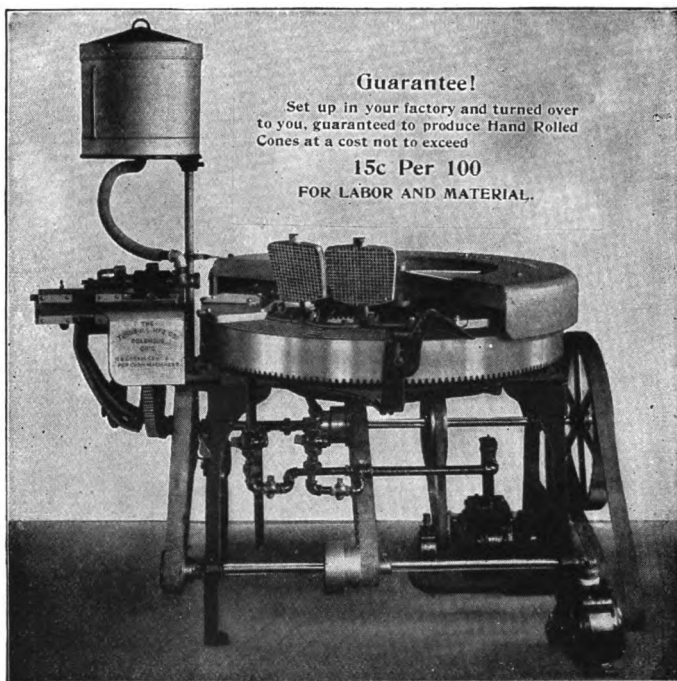
## Printing

Printing on any of the above boxes, one color, per 1000.....\$0.50

Printing on any of the above boxes, in two colors, per 1000..... .50

Minimum charge for printing is 50 cents.

## Ice Cream Cone Machine



### Guarantee!

Set up in your factory and turned over to you, guaranteed to produce Hand Rolled Cones at a cost not to exceed

**15c Per 100**

FOR LABOR AND MATERIAL.

The Turnbull Automatic Power Ice Cream Cone Machine is guaranteed to produce hand-rolled cones at a cost of not to exceed 15 cents per 100 for labor and material.

The capacity is from 7M to 10M hand-rolled cones per day. One operator only is required. Machine is automatic, the batter being fed to the irons by means of a pump, which is adjustable for cones of any size,  $6\frac{1}{2}$  inches or smaller, and any desired thickness. Baking irons pass between two burners, thus receiving uniform heat from both sides. As the cone emerges from between the burners, the operator removes and rolls it. Burners are independent and can be adjusted to brown more on one side than on the other.

Burners are furnished for natural gas, artificial gas or gasoline. If artificial gas is used it requires a 1-inch pipe direct from meter; if natural gas, and a good pressure,  $\frac{3}{4}$ -inch will be sufficient. For gasoline a special gas generating outfit is included; gasoline burners cannot be used for any other form of fuel.

We supply two leather belts, one large tray for holding cones, one set of six molds, one set of six hardwood rollers, all necessary valves and fittings for connection to gas lines.

Batter can holds 9 gallons, sufficient for about 2,500 cones.

Floor space required, about 5 feet long by 4 feet deep. Shipping weight, 1,650 pounds. Pulley on machine is 22 inches in diameter by 2-inch face. 150 to 250 R. P. M. Speed of machine can be adjusted by shifting belt on cone pulleys. One-half H. P. motor is ample.

Price, including erection and instructions for operating, formulas for making cones, and all necessary equipment as above described, F. O. B. Ohio factory, \$500.00.

**Hand Baking Irons**—Accurately ground baking plates with base to prevent escape of heat. Used on any gas stove. Price, with hardwood roller, \$5.00.

## Ice Cream Cones



Cones are carefully packed for shipment in corrugated board and cartons and a good supply may safely be ordered, as they will keep well. There are cheaper cones offered, but our cones cost the dispenser a negligible fraction of a cent more for each sale of cream made, and as they are crisp, fine flavored and absolutely pure, the extra cost is more than repaid in the satisfaction they give and the increased trade that they bring.

Style I. Hand-made.  
Style II. Molded cones.  
Style III. Molded cones.

Prices on application

## Perfect Cone Dispenser

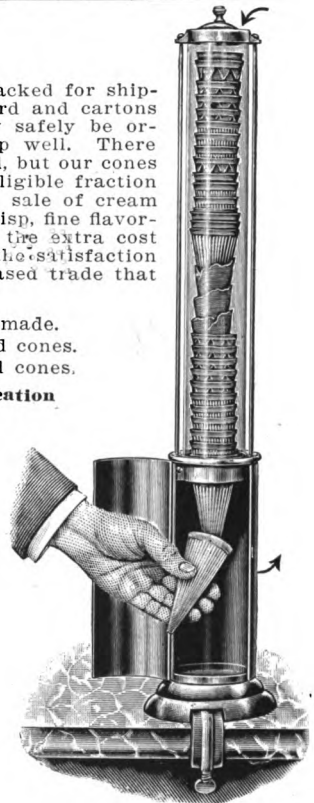
Protects cones from dust, flies and moisture. Cones are removed one at a time freely, without breakage. Saves time.

Will dispense any size or kind of cone, from a large hand-made cone to a penny size; delivers freely without leakage; has a resiliently flexible delivery device and accomplishes true results by a simple spring system never requiring repairs or renewals.

Nickel-plated and highly polished. Satisfaction guaranteed or money cheerfully refunded.

Price, each.....\$2.75

Special prices on dozen lots.



Perfect Cone Dispenser.

## Parchment Circles and Squares

Parchment Circles for packing and carrying out cans. Placed on top of the ice cream in packing cans; will prevent waste, keeps ice cream clean, prevents salt water from getting into the cream, which sometimes causes loss of both cream and trade. These parchment tops will not tear and are pure white. They come in 500 and 1,000 packages, to suit any size can. Prices, Plain, not Printed:

Diam. In.	Size Can.	Per M.	Diam. In.	Size Can.	Per M.
5	1 quart	\$0.55	7 1/2	8 quart	\$1.20
6	2 quart	.75	8 1/2	12 quart	1.50
6 1/2	3 quart	.90	9	16 quart	1.70
7	4 quart	1.00	10	20 quart	2.10
			12 1/2	40 quart	3.30

Prices subject to Discount.

### Prices for Printing Parchment Circles

Prices below are for printing only and do not include stock. Prices net.

Quantity.	Per M.	Up to 7 in.	7 1/2 to 12 in.	12 1/2 in. and over
5,000.	Per M.	\$0.50	\$0.75	\$1.00
10,000.	Per M.	.45	.70	.90
20,000.	Per M.	.40	.65	.85
50,000.	Per M.	.35	.60	.85
100,000.	Per M.	.25	.50	.75

Special Prices on Two Color Printing.

## Parchment Squares

Sizes below are largely used in wrapping bricks of ice cream. Other sizes furnished at proportionate prices.

Pints	Size of Wrapper	Per 1,000 Sheets	Pints	Size of Wrapper	Per 1,000 Sheets
1	9 x11 in.	\$1.40	5	14 x17 in.	\$3.60
2	10 1/2 x14 in.	2.20	6	15 x18 in.	3.90
3	12 x15 in.	2.35	7	16 x20 in.	4.90
4	13 x16 in.	3.20	8	17 x21 in.	5.50

Prices subject to Discount.

## Vanilla Flavors and Extracts

All our flavors and extracts are guaranteed under the National Food and Drug Act of June 30th, 1906.

### No. 1, Vanillin, Cumarin and Vanilla Flavor

This is an excellent flavor for the home. No other house furnishes a flavor of equal quality for so low a price. Will not freeze out.

Price, per gallon.....\$2.50  
Special Prices on Larger Quantities.

### No. 2, Vanillin, Cumarin and Vanilla Flavor

A high-grade, pleasant flavor for wholesale goods, that will not freeze out.

Price, per gallon.....\$3.75  
Special Prices on Larger Quantities.

### No. 3, Special for Ice Cream---Vanillin and Vanilla Flavor

The most perfect blend for ice cream purposes on the market. It is just the right flavor, rich of bean aroma and a lasting flavor. It will never freeze out. Two to three ounces in ten gallons of ice cream will satisfy the most exacting manufacturer.

1-quart.....\$1.30      ½-gallon.....\$2.50      1-gallon.....\$4.75  
Special Prices on Larger Quantities.

### No. 4, Liberty Pure Vanilla Extract

While low in price, the quality is excellent. It takes about three ounces to give a high flavor to ten gallons of ice cream. You make no mistake in selecting this for satisfactory results.

1-pint.....\$0.75      1-quart.....\$1.35      ½-gallon.....\$2.60      1-gallon.....\$5.00  
Special Prices on Larger Quantities.

### No. 5, Reliance Vanilla Extract

Made of the best Bourbon Bean. A splendid flavor.

1-pint.....\$1.00      1-quart.....\$1.75      ½-gallon.....\$3.35      1-gallon.....\$6.50  
Special Prices on Larger Quantities.

### No. 6, Premier Vanilla Extract

Made of same grade of bean as the Peerless, but is a stronger extract. In the long run, this is the most economical pure Vanilla made.

1-pint.....\$1.25      1-quart.....\$2.25      ½-gallon.....\$4.10      1-gallon.....\$8.00  
Special Prices on Larger Quantities.

### No. 7, Paragon Vanilla Extract

Made from choice Mexican beans, and has that delicious, peculiar flavor only found in the Mexican bean. Connoisseurs of Vanilla Extract will pay the price for this flavor.

1-pint.....\$1.50      1-quart.....\$2.75      ½-gallon.....\$5.10      1-gallon.....\$10.00  
Special prices on Larger quantities.

## Standard Flavors

Name	Pint	Quart	½ Gal.	Gallon
Banana .....	\$0.75	\$1.35	\$2.60	\$ 5.00
Banana, "Superior".....	1.25	2.25	4.10	8.00
Coffee .....	.75	1.35	2.60	5.00
Coffee, "Superior".....	1.25	2.25	4.10	8.00
Lemon, "Confectioner's".....	.75	1.35	2.60	5.00
Lemon, "Giant".....	1.00	1.75	3.25	6.00
Lemon, "Superior".....	1.25	2.25	4.10	8.00
Maple .....	1.25	2.25	4.10	8.00
Maple, "Superior".....	2.00	3.50	6.10	12.00
Orange, "Confectioner's".....	.75	1.35	2.60	5.00
Orange, "Giant".....	1.00	1.85	3.60	7.00
Orange, "Superior".....	1.25	2.25	4.10	8.00
Peach .....	1.00	1.75	3.25	6.00
Peach, "Superior".....	1.25	2.25	4.10	8.00
Pineapple .....	.75	1.35	2.60	5.00
Pineapple, "Superior".....	1.25	2.25	4.10	8.00
Pistachio .....	1.50	2.75	5.10	10.00
Raspberry .....	.75	1.35	2.60	5.00
Raspberry, "Superior".....	1.25	2.25	4.10	8.00
Strawberry .....	.75	1.35	2.60	5.00
Strawberry, "Superior".....	1.25	2.25	4.10	8.00

These goods are carefully packed, but we cannot be responsible for breakage in transportation.

### Concentrated Chocolate Stock

A rich, heavy chocolate syrup concentrated, saving a large part of the work of making chocolate ice cream. Requires about ½ gallon of stock for 10 gallons of finished cream. Produces a delicious flavor and insures uniform results.

In gallon jugs, per gallon.....\$ 2.00  
In ½-gallon jars, per dozen jars..... 12.00

### Dutch Process Cocoa

Makes a very fine dark chocolate. Directions for use in ice cream on each can.

In 5-pound cans, per pound.....\$0.40  
In 10-pound cans, per pound..... .36  
In 25-pound cans, per pound..... .35  
In 50-pound cans, per pound..... .34  
In 100-pound cans, per pound..... .33  
In barrels, 200 pounds, per pound..... .30

### Apollo Powdered Cocoa

A light colored cocoa, entirely free from grit and always holding in solution. Has a fine, full, rich, chocolate flavor and makes excellent chocolate ice cream. Directions for use on each can.

In 5-pound cans, per pound.....\$0.30  
In 10-pound cans, per pound..... .28  
In 25-pound cans, per pound..... .27  
In 50-pound cans, per pound..... .26  
In 100-pound cans, per pound..... .25  
In barrels, about 200 pounds, per pound..... .22

### Colors

These are all certified colors. Especially adapted for coloring ice cream.

	Per Pint	Per Quart	Per Gallon
Strawberry Color.....	\$0.75	\$1.25	\$4.00
Brilliant Carmine Red .....	1.00	1.75	6.50
Yellow Color.....	.75	1.25	4.50
Green Color.....	.75	1.25	4.50
Orange Color.....	.75	1.25	4.50
Egg Yolk (Coal Tar).....	.....	.75	2.25
Caramel Color (Burnt Sugar Coloring).....	.25	.40	1.00

## Whole and Crushed Fruit

We can furnish promptly any crushed or whole fruit on the market at lowest prices. We give below a list of those most generally used in ice cream. These are all put up in one-half gallon glass jars. A few of the popular and most-called-for flavors are also put up in full one-gallon jugs, which can be sold at a lower price. One-half gallon of any one flavor will flavor ten gallons of finished cream. The quantity of flavor may, of course, be reduced if a more delicate flavor is wanted, according to individual taste.

The one-half gallon jars are packed six jars to the case. The gallon jugs are packed four to a crate. We can ship assorted flavors in a case or crate, if wanted. A case of six jars weighs 55 pounds, gross; crate of four jugs weighs 75 pounds, gross.

	½-Gal. Jars	Gal Jugs
	Per Dozen	Each
Crushed Apricots .....	\$14.00	\$2.25
Crushed Cherry .....	16.00	2.40
Whole California Cherry .....	17.00	....
Whole and Broken Cherry .....	16.00	....
Whole Maraschino Cherry .....	18.00	....
Kentish Cherry .....	18.00	....
Chop Suey .....	18.00	2.75
Crushed Peach .....	14.00	2.25
Crushed Pineapple .....	14.00	2.25
Crushed Raspberry .....	14.00	2.25
Crushed Strawberry .....	15.00	2.25

Prices on bulk fruits, such as Whole and Broken Cherry, Crushed Pineapple, Crushed Raspberry, Crushed Strawberry and Crushed Cherry, in 5-gallon jugs, 10-gallon kegs, half barrels and barrels on application.

## Wizard Ice Cream Powder

A purely vegetable product. Guaranteed not to contain gelatine or other animal matter. Requires no heating or dissolving. Makes smooth, velvety ice cream, and is economical to use. Try a 5-pound can.

Net Prices				Net Prices	
5-pound cans.	Per pound.....	\$0.35	50-pound kegs.	Per pound....	\$0.32
10-pound cans.	Per pound.....	.34	100-pound kegs.	Per pound....	.30
25-pound pails.	Per pound.....	.33			

### Gelatine

Made Especially for Ice Cream Purposes.

Silver Label.	Per pound.....	\$0.30
Ground Gelatine.	Per pound.....	.28
Shredded Gelatine.	Per pound.....	.25

Special prices in barrel lots.

## Concentrated Emulsions

### Lemon, Orange and Lime

For making superior quality Water Ices, Frappes and Sherbets our Concentrated Emulsions are invaluable. They do away with the labor of extracting the juice from the fruit, are more economical and their use results in a superior product.

By keeping a supply of Concentrated Emulsions on hand the ice cream maker is prepared to fill orders for ices in any quantity promptly, and at a known cost without regard to the supply of fresh fruit on the market.

One and one-half ounces of Concentrated Emulsion and one pint of Fruit Acid costing together about \$1.00 is equal to ten dozen fruits (Lemons and Oranges). The saving in cost is important and the convenience of the former is beyond comparison.

Concentrated Emulsions are guaranteed under the Food and Drugs Act, June 30, 1906.

Put up in pint bottles, each bottle labeled and securely packed.

### Prices Concentrated Emulsion

Lemon.	Per pint.....	\$5.00
Orange.	Per pint .....	6.00
Lime.	Per pint.....	6.00

Discount for case of six, 10%; discount for case of twelve, 15%. Cases may be assorted if desired.

### Prices Fruit Acid

1 Pint .....	\$0.60
1 Quart .....	1.00
½ Gallon .....	1.90
1 Gallon or over, per gallon.....	3.75

# Card Ice Cream Molds

<b>Club</b>		<b>Heart</b>		<b>Spade</b>		<b>Diamond</b>	
1 quart.....	\$2.25	1 quart.....	\$1.60	1 quart.....	\$2.25	1 quart.....	\$1.40
2 quart.....	2.50	2 quart.....	2.00	2 quart.....	2.50	2 quart.....	1.75

## Individual Tin Molds for Ice Cream

<b>Brick</b>		<b>Strawberry Basket</b>		<b>Melon</b>		<b>Diamond</b>	
Per doz.....	\$3.50	Per doz.....	\$4.50	Per doz.....	\$4.00	Per doz.....	\$5.00
<b>Turk's Head</b>		<b>Block</b>		<b>Croquettes</b>			
Per doz.....	\$3.50	Per doz.....	\$3.50	Per doz.....	\$3.00		

## Large Metal Ice Cream Molds

No.	A	Each	No.	Each
106 Apple, 3 pint.....		\$ 8.00	32 Lion, 3 pint.....	13.50
111 Asparagus, bunch, 3 pint.....		15.00	155 Locomotive, 4 pint.....	16.00
<b>B</b>			163½ Lohengrin Swan, 1 pint.....	6.00
150 Bartholdi Statue (Statue of Liberty), 5 quart.....		30.00	<b>M</b>	
150 Bartholdi Pedestal, 13 quart.....		25.00	116 Mushroom, 2 pint.....	8.00
153 Basket, oval, 4 pint.....		13.50	113 Muskmelon, 3 pint.....	9.00
168 Basket, round, 4 pint.....		13.50	103 Muskmelon, 2 pint.....	8.00
2 Bear, 3 pint.....		11.50	<b>O</b>	
170 Bomb, 4 pint.....		10.00	166 Oyster Plate (Ice Dish), 1 pint...	9.00
158 Bomb, 6 pint.....		13.50	<b>P</b>	
<b>C</b>			38 Parrot, 2 pint.....	11.50
33 Camel, 4 pint.....		13.50	101 Pear, 3 pint.....	8.00
10 Cat, 3 pint.....		11.50	3 Pheasant, 4 pint.....	13.50
120 Champagne Bottle, 1 pint.....		10.00	112 Pineapple, 4 pint.....	11.00
26 Cooing Doves, 2 pint.....		9.00	110 Pineapple, 3 pint.....	9.90
172 Cornucopia, 4 pint.....		20.00	104 Pumpkin, 4 pint.....	10.00
161 Cottage, 4 pint.....		16.00	<b>R</b>	
25 Cookoo, 2 pint.....		11.50	12½ Rabbit, 3 pint.....	13.50
<b>D</b>			40 Rabbit, 2 pint.....	10.00
1 Dog, St. Bernard, 4 pint.....		11.50	4 Rooster, 4 pint.....	11.50
16 Dove, 1 pint.....		5.00	114 Rose, 4 pint.....	10.00
23 Duck, 3 pint.....		12.50	<b>S</b>	
<b>E</b>			1 St. Bernard Dog, 4 pint.....	11.50
15 Eagle, 3 pint.....		15.00	171 Santa Claus, 3 pint.....	13.50
107 Egg, 3 pint.....		8.00	157 Skull, 5 pint.....	20.00
22 Elephant, 3 pint.....		11.50	44 Soldier & Standard, 4 pint.....	24.00
<b>F</b>			150 Statue of Liberty (Bartholdi Statue), 5 quart.....	30.00
14 Fish, 3 pint.....		11.00	160 Strawberry Plate, 3 pint.....	9.00
13 Fish, 2 pint.....		8.00	7 Swan, 3 pint.....	10.00
<b>G</b>			<b>T</b>	
100 Grape, 3 pint.....		13.50	42 Tiger, Lady and, 4 pint.....	24.00
<b>H</b>			6 Turkey, 3 pint.....	13.50
19 Hen, 4 pint.....		12.50	41 Turkey, 2 pint.....	9.00
20 Hen, 3 pint.....		9.00	<b>V</b>	
27 Hen, 2 pint.....		8.00	154 Vase, Flower, 3 pint.....	11.50
5 Horse, 3 pint.....		12.50	123 Vase, Ice, 6 pint.....	20.00
35 Horse Head, 3 pint.....		13.50	<b>W</b>	
<b>I</b>			151 Washington, 6 pint.....	20.00
166 Ice Dish, Oyster Plate, 1 pint.....		9.00	108 Watermelon, 7 pint.....	16.00
<b>L</b>			<b>Y</b>	
42 Lady & Tiger, 4 pint.....		24.00	156 Yacht, 3 pint.....	12.50
150 Liberty, Statue of (Bartholdi Statue), 5 quart.....		30.00	<b>Z</b>	
17 Lion, 6 pint.....		16.50	152 Zouave, 6 pint.....	20.00

## Individual Metal Molds

A		Molds	Per	No.		Molds	Per
No.		per Qt.	Doz.			per Qt.	Doz.
900	Ace of Spades.....	12	\$9.60	646	Buffalo.....	6	\$12.00
901	Ace of Diamonds.....	12	9.60	990	Bulb, Electric Light.....	8	9.60
902	Ace of Hearts.....	12	9.60	626	Bull.....	6	12.00
903	Ace of Clubs.....	12	9.60	671	Bull, Fighting.....	8	12.00
202	Acorn.....	8	9.60	*260	Butterfly.....	7	12.00
996	Alphabet, A to Z.....	10	9.60	679	Butterfly.....	8	12.00
	American Flag, see Old Glory.						
	American Shield, see Shield.						
1036	Anvil.....	9	12.00				
240	Apple.....	6	12.00	1090	Cabbage Rabbit in.....	9	12.00
*303	Apple.....	7	12.00	1082A	Calf's Head.....	7	12.00
*328	Apple.....	9	9.60	357	Calla Lily.....	7	14.40
239	Apple.....	9	9.60	681	Camel.....	10	12.00
282	Apple $\frac{3}{4}$ .....	9	9.60	300	Camelia.....	9	9.60
310	Apple, 3 in mold.....	14	9.60	*304	Camelia.....		12.00
238	Apple.....	20	9.60	640	Canary.....	9	12.00
343	Apple, Crab.....	14	9.60	620	Canary.....	26	9.60
*1100	Arcanum, Royal.....	9	12.00	932	Candle and Candlestick....	6	12.00
223	Artichoke.....	9	9.60	932½	Candle and Stick.....	9	12.00
222	Artichoke.....	22	9.60	1072	Cannon.....	8	10.20
223½	Asparagus.....	9	10.80	916	Cards, Ace Clubs.....	9	12.00
224a	Asparagus.....	9	10.80	917	Cards, Ace Diamonds.....	9	12.00
224	Asparagus.....	14	9.60	918	Cards, Ace Hearts.....	9	12.00
225	Asparagus.....	24	9.60	919	Cards, Ace Spades.....	9	12.00
333	Asparagus, bunch.....	9	9.60	922	Cards, King Clubs.....	9	12.00
296	Aster.....	9	9.60	923	Cards, King Diamonds....	9	12.00
1080	Automobile.....	8	12.00	920	Cards, King Hearts.....	9	12.00
1091	Automobile, Rabbit and Egg	8	12.00	921	Cards, King Spades.....	9	12.00
				925	Cards, Queen Clubs.....	9	12.00
				926	Cards, Queen Diamonds....	9	12.00
				927	Cards, Queen Hearts.....	9	12.00
				924	Cards, Queen Spades.....	9	12.00
				931	Cards, Jack Clubs.....	9	12.00
				928	Cards, Jack Diamonds....	9	12.00
				929	Cards, Jack Hearts.....	9	12.00
				930	Cards, Jack Spades.....	9	12.00
					Cards, see also under head		
					of Ace.		
				361	Carnation.....	10	10.20
				258	Carrot.....	18	9.60
				293	Cauliflower, Sprig.....	8	12.00
				1059	Cap, Liberty.....	9	12.00
				644	Cat.....	9	12.00
				1024	Celery.....	10	9.60
				1061	Chalice Cup.....	8	13.20
				1092	Champagne Bottle.....	12	9.60
				1026	Champagne Cork.....	8	9.60
				1056	Champagne Glass, new.....	8	15.60
				988	Champagne Glass, Roman		
					Punch.....	6	14.40
				988a	Champagne Glass.....	9	12.00
				340	Cherries, 4 in mold.....	20	9.60
				341	Chestnut.....	15	9.60
				673	Chicken.....	6	12.00
				652	Chicken.....	8	12.00
				600	Chicken and Eggs.....	8	9.60
				601	Chicken and Eggs.....	13	9.60
				651	Chicken.....	10	12.00
				608	Chicken.....	15	9.60
				1049	Chicken, Cupid Catching..	12	12.00
				1050	Chicken, Cupid Riding.....	12	12.00
				682	Child of Spring.....	8	12.00
				344	Chrysanthemum.....	6	9.60
				355	Chrysanthemum.....	6	12.00
				345	Chrysanthemum.....	9	9.60
				312	Cigar.....	12	9.60
				606	Clam.....	12	9.60
				999	Clock, Grandfather's.....	9	12.00
				1035	Clown.....	10	12.00
				335	Clover, four leaved.....	6	12.00
				1012	Coffin.....	8	12.00
					Colored Man, see Darkey.		
				1017	Columbus.....	7	12.00
				665	Cooing Doves.....	8	14.40

\*Tutti Frutti Mold.



## Individual Metal Molds—Continued.

No.		Molds per Qt.	Per Doz.	No.		Molds per Qt.	Per Doz.
219	Corn .....	6	\$10.80	1082	Egg, Cupid Cracking.....	7	\$12.00
218	Corn .....	12	9.60	1091	Egg and Rabbit on Auto- mobile .....	8	12.00
1095	Cotton Bale .....	8	12.00	915	Egg and Koko .....	6	12.00
659	Cow .....	9	9.60	973	Eiffel Tower .....	6	14.40
612	Crab .....	11	9.60	990	Electric Light Bulb.....	8	9.60
343	Crab Apple .....	14	9.60	656	Elephant .....	8	9.60
306	Croquette, large.....	8	12.00	1101	Elk's Head Medallion.....	8	12.00
979	Croquette, small.....	12	9.60	1005	Emblem, Knight Templars Cross .....	9	12.00
980	Croquette, conical.....	8	12.00		Emblems, see Masonic.		
1060	Crown .....	7	12.00	1104	Eskimo .....	8	12.00
226	Cucumber .....	8	9.60		F		
938	Cup, Glace.....	6	9.60	1025	Fan, Japanese .....	7	12.00
1067	Cup, Glace.....	4	13.20	1032	Fairy .....	10	12.00
1105	Cup, Glace (2¼ in. diam- eter, 2½ in. deep).....		19.20	994	Father Knickerbocker, Head, Glace .....	7	24.00
1079	Cup, Loving .....	9	15.60		Fiddle, see Violin.		
939	Cup, Glace, with cover.....	9	15.60	1016	Firecracker .....	7	12.00
962	Cup, Glace, paper case.....	6	9.60	604	Fish .....	12	9.60
963	Cup, Glace, paper case with cover .....	6	15.60		Fish, see Dolphin.		
1061	Cup Chalice.....	8	13.20	951	Fisherman .....	7	12.00
992	Cupid .....	12	12.00	997	Fleur de Lis.....	16	9.60
1102	Cupid and Heart.....	8	12.00		Flag, see Old Glory.		
959	Cupid in Rose.....	8	9.60	1027	Flower Pot .....	7	12.00
1082	Cupid Cracking Egg.....	7	12.00	1028	Flower Pot, Roman Punch.	7	9.60
1049	Cupid Catching Chicken.....	12	12.00	1008	Football .....	8	12.00
1050	Cupid Riding Chicken.....	12	12.00	1037	Foot Trilby.....	8	12.00
1055	Cupid and Egg.....	9	12.00	653	Frog .....	8	12.00
1058	Cupid and Rabbit Running.	9	13.20	955	Frog under Toadstool.....	8	12.00
1051	Cupid, Rabbit and Egg.....	10	12.00		G		
1077	Cyrano de Bergerac.....	6	14.40				
	D			1105	Glace, Cup, 2¼-in. diameter, 2½ in. deep.....		19.20
358	Daffodil .....	9	12.00	938	Glace, Cup .....	6	9.60
299	Dahlia .....	9	9.60	1067	Glace, Cup.....	4	13.20
317	Daisy .....	8	9.60	939	Glace, Cup, with cover.....	9	15.60
349	Daisy, 3 in mold.....	24	9.60	962	Glace, Cup, paper case.....	6	9.00
1053	Darkey .....	9	13.20	963	Glace, Cup, paper case, with cover .....	6	15.60
1039	Darkey stealing Turkey.....	8	12.00	969	Glace, Goblet.....	6	12.00
634	Deer .....	11	9.60	970	Glace, Goblet, with cover..	6	19.20
1078	Dewey Bust.....	8	13.20	975	Glass (Punch), plain.....		12.00
904	Dice .....	8	9.60	976	Glass (Punch), ribbed cup with handle .....		14.40
667	Dolphin .....	8	12.00	976a	Glass (Punch), Ribbed.....	7	12.00
641	Donkey .....	10	12.00	988a	Glass, Champagne.....	9	12.00
654	Dog .....	8	12.00	648	Goat .....	9	12.00
636	Dog .....	11	9.60	940	Goblet, Glace .....	9	9.60
665	Doves, Cooing.....	8	14.40	941	Goblet, with cover.....	9	19.20
677	Dove of Peace.....	8	13.20	969	Goblet, Glace.....	6	12.00
1074	Drum .....	8	14.40	970	Goblet, Glace, with cover..	6	19.20
1034	Dude .....	10	12.00	940a	Goblet .....	9	12.00
978	Dutch Clog.....	9	9.60	941a	Goblet .....	8	12.00
622	Duck .....	11	9.60		Goblet, with cover.....	8	13.80
	E			1063	Goddess of Music.....	7	12.00
655	Eagle .....	7	12.00	1048	Golf Ball .....	12	9.60
354	Easter Lily.....	6	14.40	1042	Golfplayer .....	7	12.00
915½	Eclair .....	9	9.60	1043	Golfplayer, Lady.....	7	12.00
908	Egg .....	6	12.00	999	Grandfather's Clock.....	9	12.00
907	Egg .....	9	9.60	1057	Grant Medallion.....	9	12.00
906	Egg .....	10	9.60	278	Grape .....	8	9.60
909	Egg .....	15	9.60	280	Grape .....	16	9.60
910	Egg .....	12	9.60	*262	Grape .....		12.00
294	Egg, 2 in mold.....	22	9.60	280a	Grape .....	12	9.60
286	Egg, 3 in mold.....	30	9.60	256	Grape Leaf .....	9	9.60
320	Egg, 4 in mold.....	32	9.60	983	Guitar .....	8	12.00
946	Egg, sliced.....	9	9.60	971	Gypsy Kettle, Roman Punch	6	12.00
1087	Egg, poached.....	12	9.60				
1055	Egg and Cupid.....	9	12.00				
1051	Egg, Cupid and Rabbit.....	10	12.00				

\*Tutti Frutti Mold.

## Individual Metal Molds—Continued.

No.	H	Molds per Qt.	Per Doz.	No.		Molds per Qt.	Per Doz.
1098	Holly Leaf.....	8	\$12.00	1044	Mechanic .....	8	\$13.20
1006	Hat, Ladies.....	12	12.00	1057	Medallion, Grant.....	9	12.00
	Hat, Ladies, see Bonnet.			*276	Melon .....		12.00
1070	Hat, Military.....	8	10.20	204	Melon .....	8	9.60
1038	Hat, Tritel.....	6	12.00	232	Melon, slice.....	10	9.60
1065	Heart Monogram (B. C.)..	12.00		913	Mikado .....	9	9.60
1102	Heart & Cupid.....	8	12.00	914	Mikado .....	10	9.60
956	Heart Pierced by Arrow...	8	12.00	1070	Military Hat.....	8	10.20
956½	Heart, plain.....	9	12.00	1083	Minerva's Helmet .....	10	12.00
977	Helmet .....	10	9.60	954	Monk .....	8	12.00
1083	Helmet, Minerva's.....	10	12.00	642	Monkey .....	10	12.00
668	Hen .....	10	9.60	1068	Monitor .....	7	14.40
660	Hobby Horse.....	7	13.20	1065	Monogram Heart (B. C.)..		12.00
647	Hog .....	8	12.00	966	Moon, Man in the.....	8	12.00
1004	Horn of Plenty.....	8	12.00	297	Morning Glory.....	9	9.60
1007	Horn of Plenty, plain.....	8	12.00	981	Mother Hubbard.....	7	14.40
639	Horse .....	8	12.00	672	Mouse .....	32	12.00
664	Horse Head.....	8	15.60	242	Mushroom .....	11	9.60
993	Horse Hoof.....	10	19.20	243	Mushroom .....	15	9.60
974	Horse Shoe.....	9	9.60	339	Mushroom, 3 in mold.....	20	9.60
1055	Horse Shoe and Horse Head..	14	10.20	1063	Music, Goddess of.....	7	12.00
1086	Horse Shoe and Horse Head..	10	10.20	670	Mussel .....	15	9.60
660	Horse, Hobby.....	7	13.20	961	Mutton Chop.....	9	9.60
356	Ilyacinth .....	6	12.00	1081	Mystic Shrine Emblem....	8	13.20
J				N			
1025	Japanese, Fan.....	7	12.00	1002	Nesselrode .....	6	9.60
	Japanese, see Mikado.			1003	Nesselrode .....	9	9.60
K				1009	Newsboy .....	6	12.00
971	Kettle, Gypsy, Roman Punch.	6	12.00	210	Nut .....	12	9.60
933	Knapsack .....	8	9.60	O			
1005	Knight Templars Cross.....	9	12.00	1075	Old Glory .....	8	10.20
915	Koko and Egg.....	6	12.00	1094	Old Shoe .....	8	12.00
L				307	Orange .....	8	9.60
628	Lamb .....	11	9.60	347	Orange .....	15	9.60
1054	Lamp .....	9	12.00	360	Orange Blossoms .....	8	13.20
953	Lawn Tennis Racquet.....	7	12.00	663	Owl .....	9	12.00
*268	Leaf .....	12.00		P			
1098	Leaf, Holly.....	8	12.00	972	Palette .....	8	9.60
319	Leaves, Lily of Valley.....	8	12.00	220	Pansy .....	20	9.60
319a	Leaf, Lily of Valley.....	8	12.00	348	Pansies, 3 in mold.....	30	9.60
336	Leaves, Rose.....	20	12.00	1045	Parasol .....	9	12.00
308	Lemon .....	8	9.60	632	Parrot .....	10	9.60
346	Lemon .....	15	9.60	*270	Passion Flower.....		12.00
996	Letters A to Z.....	10	9.60	350	Passion Flower.....	9	12.00
1059	Liberty Cap.....	9	12.00	1029	Pate .....	8	12.00
324	Lilac .....	8	9.60	677	Peace, Dove of.....	8	13.20
354	Lily, Easter.....	6	14.40	*329	Peach .....	9	9.60
318	Lily, Pond.....	6	14.40	233	Peach .....	6	12.00
319	Lily of Valley Leaves.....	8	12.00	234	Peach .....	8	9.60
319a	Lily of Valley Leaf.....	8	12.00	236	Peach .....	12	9.60
1099	Lincoln Bas Relief.....	7	12.00	288	Peach, 3 in mold.....	14	9.60
618	Lion .....	9	9.60	235	Peach .....	16	9.60
674	Lion .....	6	12.00	206	Peach, half.....	10	9.60
965	Little Lord Fauntleroy.....	7	14.40	237	Peach .....	7	12.00
982	Little Red Riding Hood.....	7	14.40	*272	Pear .....	7	12.00
602	Lobster .....	10	9.60	248	Pear .....	9	9.60
1047	Locomotive .....	9	12.00	248a	Pear .....	8	9.60
987	Log .....	7	12.00	250	Pear .....	9	12.00
1079	Loving Cup.....	9	15.60	249	Pear .....	11	9.60
M				284	Pear .....	15	9.60
1069	Man-of-War .....	7	14.40	284	Pear, 3 in mold.....	20	9.60
	See Monitor.			323	Peas in Pod, 2 in mold....	9	12.00
966	Man in the Moon.....	8	12.00	359	Peony .....	10	12.00
964	Mandolin .....	8	12.00	298	Petunia .....	9	9.60
1019	Marriage Bell.....	7	12.00	1097	Pie, Squash.....	8	12.00
948	Masonic Emblem (Square and Compass).....	8	14.40		Pig, see Hog.		
948½	Masonic Emblem (Letter "G") .....	8	13.20		Pig, see Roast Suckling.		
949	Masonic Emblem (Letter "G") .....	8	13.20	253	Pineapple .....	7	10.80
	Masonic Emblem, see Mystic Shrine.			252	Pineapple .....	12	9.60
950	Match Safe.....	7	15.60	*274	Pineapple .....	7	12.00
				*330	Pineapple .....	9	9.60
				995	Plymouth Rock.....	9	9.60
				318	Pond Lily.....	6	14.40
				967	Poke Bonnet .....	8	12.00
				244	Potato .....	8	9.60

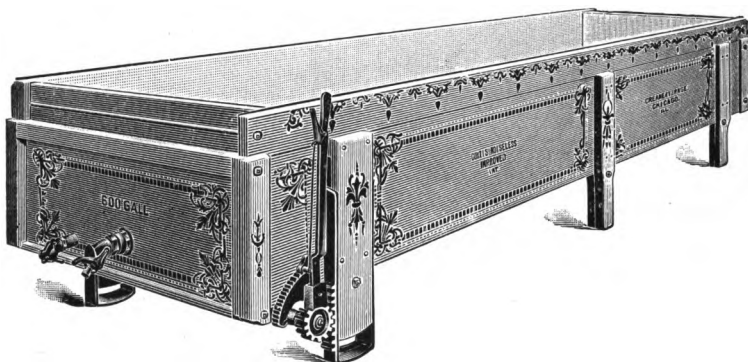
\*Tutti Frutti Mold.

## Individual Metal Molds—Continued

No.		Molds per Qt.	Per Doz.	No.		per Qt. Molds	Doz. Per
246	Potato .....	23	\$ 9.60	680	Squirrel .....	11	\$ 9.60
338	Potato, 3 in mold .....	12	9.60	1071	Standard, American .....	8	10.20
1023	Pousse Cafe, Glass, tin cover .....	12	14.40	1041	Star .....	10	12.00
975	Punch Glass, Plain .....	5	12.00	*277	Star .....	7	12.00
976	Punch Glass, Ribbed .....	6	14.40	316	Strawberry .....	12	9.60
976a	Punch Glass, Ribbed .....	7	12.00	290	Strawberry, 3 in mold .....	24	9.60
657	Puss in Shoe .....	6	12.00	292	Strawberry, 2 in mold .....	26	9.60
912	Pyramid .....	9	9.60	292½	Strawberry, 2 in mold .....	36	9.60
Q				1021	Strawberry, Odd Shape .....	9	9.60
332	Quince .....	7	9.60	1022	Strawberry, Odd Shape .....	10	9.60
334	Quince .....	20	9.60	216	Sunflower .....	12	9.60
R				678	Suckling, Pig .....	9	12.00
953	Racquet, Lawn Tennis .....	7	12.00	630	Swan .....	11	9.60
675	Rabbit .....	8	9.60	*264	Swan .....	7	12.00
1058	Rabbit and Cupid Running .....	9	13.20	666	Swan, Roman Punch .....	11	19.20
1090	Rabbit in Cabbage .....	9	12.00	T			
1091	Rabbit and Egg on Automob- ile .....	8	12.00	1103	Teddy Bear .....	6	15.60
658	Rabbit .....	6	12.00	989	Telephone .....	8	12.00
353	Raspberries, 4 in mold .....	32	12.00	937	Ten Pin .....	8	9.60
982	Red Riding Hood .....	7	14.40	676	Tiger .....	7	12.00
678	Roast Suckling Pig .....	9	12.00	955	Toadstool and Frog .....	8	12.00
662	Roast Turkey .....	8	12.00	*326	Tomato .....	9	9.60
	Roman Punch, see Gypsy Kettle.			208	Tomato .....	7	9.60
	Roman Punch, see Swan.			1030	Traveling Trunk .....	7	12.00
	Roman Punch, see Champagne.			1037	Trilby Foot .....	8	12.00
995	Rock, Plymouth .....	9	9.60	1038	Trilby Hat .....	6	12.00
645	Rooster .....	8	12.00	302	Tulip .....	14	9.60
295	Rose .....	7	9.60	352	Tulip .....	10	9.60
212	Rose .....	16	9.60	650	Turkey .....	7	12.00
321	Rose .....	10	9.60	662	Turkey, Roast .....	8	12.00
322	Rose, 3 in mold .....	30	9.60	961a	Turks Head Cake .....	9	12.00
950	Rose and Cupid .....	8	9.60	303	Tutti Frutti Apple .....	7	12.00
301	Rosebud .....	9	9.60	328	Tutti Frutti Apple .....	9	9.60
313	Rosebud .....	24	9.60	260	Tutti Frutti Butterfly .....	7	12.00
314	Rosebud .....	30	9.60	266	Tutti Frutti Birdsnest .....	7	12.00
336	Rose Leaves .....	20	12.00	304	Tutti Frutti Camelia .....	7	12.00
*1100	Royal Arcanum .....	9	12.00	262	Tutti Frutti Grape .....	7	12.00
S				268	Tutti Frutti Leaf .....	7	12.00
1064	Sailor .....	7	12.00	276	Tutti Frutti Melon .....	7	12.00
991	Santa Claus .....	7	12.00	270	Tutti Frutti Passion Flower .....	7	12.00
991½	Santa Claus .....	8	12.00	272	Tutti Frutti Pear .....	7	12.00
	"Santa Maria," see Ship.			327	Tutti Frutti Pear .....	9	9.60
947	Saucer .....	10	9.60	329	Tutti Frutti Peach .....	9	9.60
958	Scales .....	8	9.60	274	Tutti Frutti Pineapple .....	7	12.00
1039	Shamrock .....	8	12.00	330	Tutti Frutti Pineapple .....	9	9.60
315	Sheaf of Wheat .....	15	9.60	277	Tutti Frutti Star .....	7	12.00
200	Sheaf .....	10	9.60	264	Tutti Frutti Swan .....	7	12.00
649	Sheep .....	8	12.00	326	Tutti Frutti Tomato .....	9	9.60
616	Shell .....	10	9.60	1100	Tutti Frutti Royal Arcanum .....	9	12.00
1076	Shield, American .....	8	10.20	U			
1018	Ship, "Santa Maria" .....	8	12.00	998	Umbrella .....	12	9.60
1094	Shoe, Old .....	8	12.00	1073	Uncle Sam .....	8	12.00
	Shoe, see Dutch Clog.			V			
657	Shoe, Puss in .....	6	12.00	1046	Valentine .....	9	12.00
	"Shriner," see Mystic Shrine.			337	Violet Leaves .....	20	12.00
1000	Skiff, without cover .....	12	9.60	985	Violin .....	8	12.00
1001	Skiff, with cover .....	12	12.00	W			
	Skiff, see Boat.			942	Waffle .....	8	9.60
1010	Skull .....	6	13.20	1084	Washington Bust .....	8	12.00
1011	Skull, Roman Punch .....	6	13.20	1093	Washington's Head on Hatchet .....	8	12.00
899	Slipper .....	9	12.00	1106	Watch .....	7	12.00
899a	Slipper .....	8	14.40	952	Watch .....	9	9.60
325	Snowball (Flower) .....	8	9.60	315	Wheat, Sheaf of .....	15	9.60
1052	Soldier .....	9	13.20	669	Wolf .....	8	12.00
652	Spring, Child of .....	8	12.00	Y			
309	Squash .....	8	9.60	986	Yacht .....	7	12.00
309½	Squash .....	12	9.60	*Tutti Frutti Mold.			
351	Squash .....	15	9.60				
1097	Squash Pie .....	8	12.00				

## Cheese Factory Vats

### With Steam Pipes



**The Up-to-Date Cheese Vat**

Our Cheese Vats are constructed throughout in the most substantial manner. The wood vats are made of pine, which experience has shown to be the best wood for this purpose, and the best and heaviest tin plate is used for the tin vats. Our vats are made with channel bottoms sloping from the sides to the center, the slope increasing toward the outlet. By this arrangement it is not necessary to tilt the vat to draw off the entire contents. The tin vats are painted on the outside to prevent rusting.

The rail to which the tin vat is attached does not project beyond the body of the vat. The sides of the vats are kept from bulging by spreading rods, and Perfection Gates are furnished for outlets.

Our Steam Mufflers are attached to the steam pipes, which makes the heating-up process noiseless.

We call special attention to the greatly increased durability of vats with copper bottoms or full copper linings.

**Sizes and Prices Up To Date Cheese Vats With Tilter**

Size	Tin Lined	Copper Bottom	Copper Lined	20 Gauge Steel	Size	Tin Lined	Copper Bottom	Copper Lined	20 Gauge Steel
100 Gal.	\$48.00	\$66.00	\$ 79.00	\$65.00	500 Gal.	\$ 80.00	\$100.00	\$181.00	\$ 97.50
150 "	50.00	70.00	81.00	70.00	600 "	90.00	110.00	144.00	105.00
200 "	56.00	73.00	86.00	75.00	700 "	100.00	120.00	155.00	115.00
300 "	65.00	79.00	96.00	83.00	800 "	110.00	130.00	168.00	125.00
400 "	75.00	89.00	118.00	92.00	900 "	120.00	145.00	180.00	140.00
					1000 "	130.00	155.00	192.00	155.00

Special sizes made to order

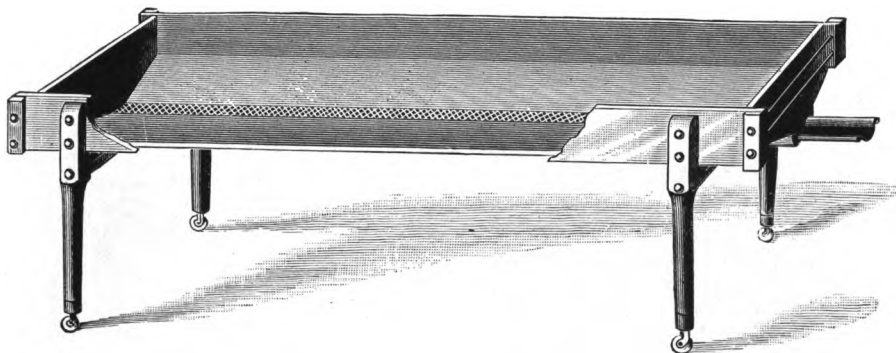
If Vat is wanted without Tilter, deduct \$10.00 from list.

**Prices of Extra Tin Linings With Rails**

100 Gallons.....	\$18.00	500 Gallons.....	\$35.00
150 Gallons.....	20.00	600 Gallons.....	37.00
200 Gallons.....	22.00	700 Gallons.....	42.00
300 Gallons.....	27.00	800 Gallons.....	47.00
400 Gallons.....	32.00	1000 Gallons.....	57.00

NOTE—The Victor Steel Cheese Vat is listed on page 72.

## Curd Sinks



Sink is made of selected lumber, free from knots. Has perforated copper strainer, full length, also drain pipe. Price includes casters.

12 feet long x 3 ft. 2 in. x 9 in. ....\$30.00  
14 feet long x 3 ft. 2 in. x 9 in. .... 35.00

## Perforated Tin

For repairing Curd Sinks, Strainers, etc., furnished in IC. thickness and in 10x14 in. and 14x20 in. sheets.

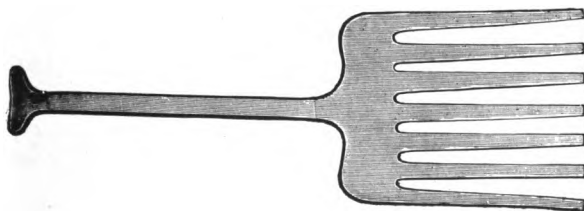
	1 Extra Fine	2 Fine	3 Medium	4 Coarse	5 Extra Coarse
No. Holes per in. 10x14	18	15	12	10	8
Sheets per doz. 14x20					
Sheets per doz.					

### Market Price

## Curd Sink Casters

5-inch wheels, per set of 4.....\$2.25

## Curd Forks



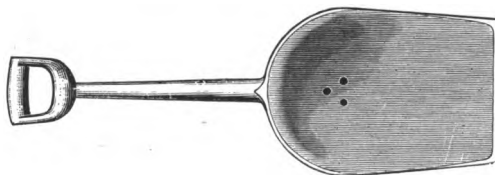
This is designed as a curd fork for handling curd. Every cheese-maker will see the value of it at once.

Price .....each, \$0.75

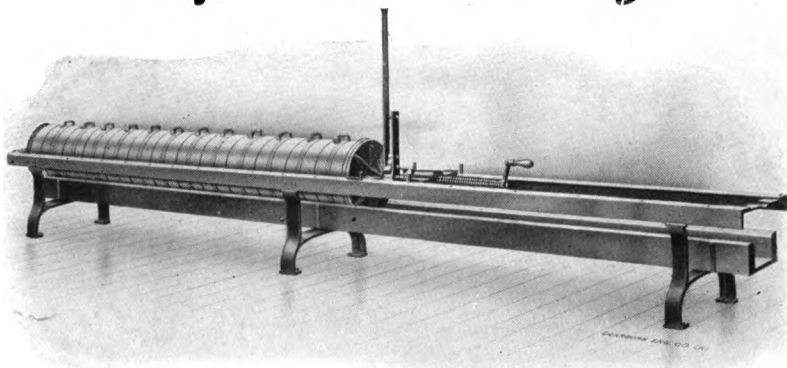
## Curd Scoops

This scoop is made from wood and is strong and durable.

Short handle .....each, \$0.75  
Long " ..... " 1.50



## New Style Steel "Fraser" Gang Press



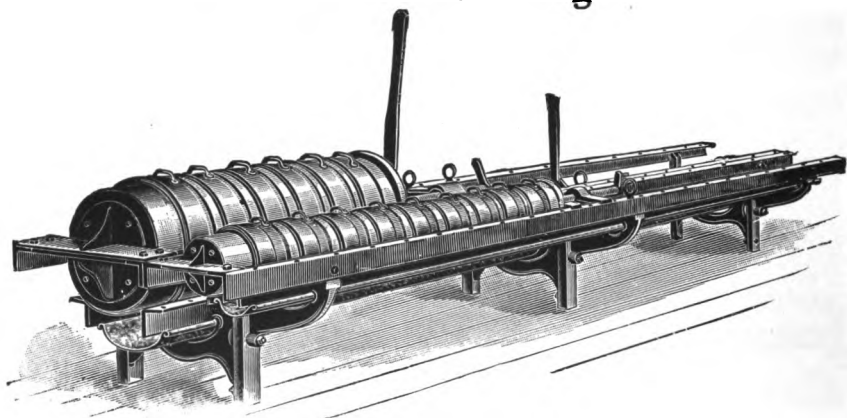
Our new Steel Press is of great durability and strength—easily kept clean and sweet, so necessary in all cheese implements. We also make a Single Gang Steel Press for Young Americas.

It is safe to say that a steel press will last twice as long as the ordinary wood press. Wood presses for both Cheddars and Young Americas furnished when wanted.

### Sizes and Prices

Standard size, 16 ft. long.....	\$45.00	Young Americas, double row....	\$50.00
Special sizes, 12 and 14 ft. long..	43.00	Young America and Cheddar dou-	
For Young America Cheese.....	40.00	ble row .....	60.00

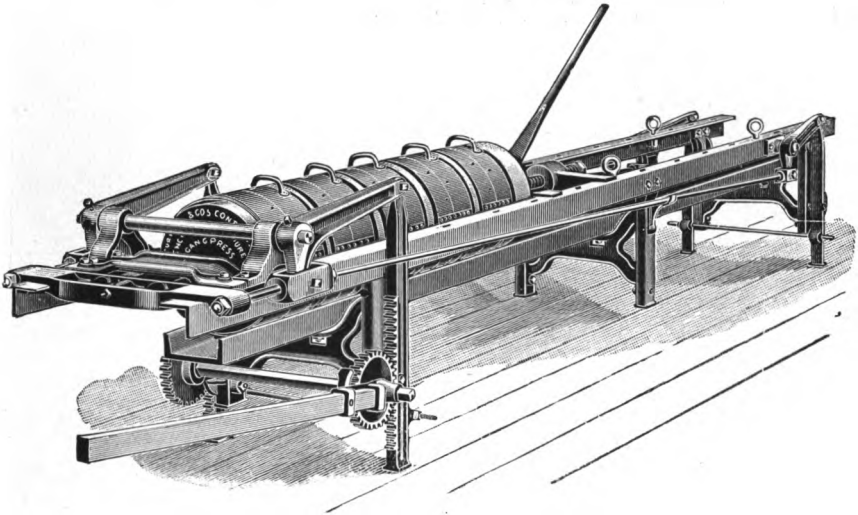
## Combination Steel Gang Press



As can be seen from the cut the combination press takes two side by side gangs of cheese, on one side the large diameter cheese from 13½ to 16 inches in diameter, and on the other side a gang of Y. A. or 7 inch cheese. The press consists of one of our Standard Steel Gang Presses, with the Y. A. parts bolted on one side and supported by three bracket castings. Capacity twelve 10 inch deep large cheese, and 21 Y. A. or 7 x 7 cheese. Shipping weight, 800 lbs. Length, 16 feet.

**Price .....** \$60.00

## The "Helmer" Patent Continuous Pressure Steel Gang Cheese Press



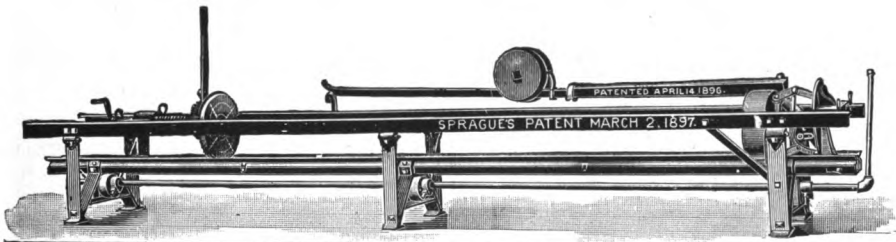
This successful press has been on the market for several years, and a large number have been sold, giving excellent satisfaction in every case. It effects a great saving in labor and produces a better cheese, especially of more uniform texture. This is because of the steady, uniform pressure upon the cheese all the time they are in the press.

The working of the press is entirely automatic. It is operated in the same way as the old style gang press—by simply working the lever. The press rises from the floor, thereby utilizing the weight of the press and cheese themselves in keeping a steady pressure on the cheese. After the cheese have been put to press, the press gradually settles down to the floor, and the automatic mechanism keeps a constant pressure on the cheese, taking up the slack. After the press is once run up it requires no further attention.

### Price Without Hoops

For pressing from 10 to 20 cheese, depending upon the thickness, diameters 13½ to 16 inches .....\$75.00

## The Patent "Sprague Automatic" Adjustable Steel Gang Press

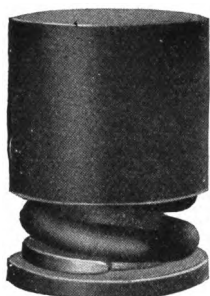


The Patent Adjustable Steel Gang Press represents the latest improvement in Gang Presses. Its special and distinctive feature is that the side rails are laterally movable, so that the width of the press is variable and adjustable. The movement of the side rails is controlled by the upright lever shown in cut at right-hand end of press. When this lever is drawn in one direction it spreads the side rails, and when pushed over in the opposite direction it draws the side rails together and clamps or locks the hoops in the press.

### Prices Without Hoops

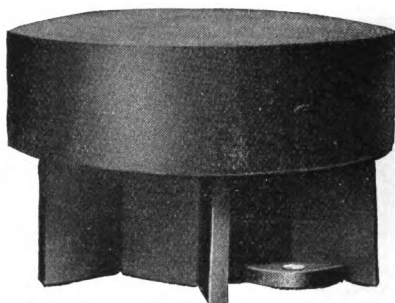
With Automatic Pressure Block, complete .....\$85.00  
Without Automatic Pressure Block ..... 68.00

## Continuous Pressure Blocks



### The Victor

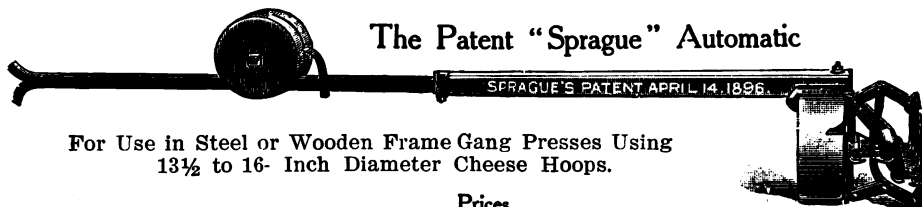
For Use in Gang  
or Upright  
Presses.



These Pressure Blocks provide a simple method of keeping up a continuous pressure on the cheese while being pressed. The blocks are placed between the hoop and the driver, or follower, and are so provided with springs as to keep up the pressure as cheese shrink in thickness. They are a very cheap and useful article.

On account of construction, the springs being covered, they are easily kept clean.

Price for large press .....\$6.00; Same galvanized .....\$8.00  
Price for Young America Press. 5.00; Same galvanized ..... 7.00



For Use in Steel or Wooden Frame Gang Presses Using  
13½ to 16- Inch Diameter Cheese Hoops.

### Prices

For 13½ to 16-inch diameter cheese .....\$17.00  
For Y. A. cheese, made to order ..... 10.00

## Cheese Press Extras

### "Sprague" Gang

No. 1, Half of Clamp for Shaft..\$0.30	No. 5, Head of Press (51 lbs.)...\$4.50
" 2, Clamp for rod ..... .15	" 6, Cap for screw ..... 5.00
" 3, Legs for press (35 lbs.)... 3.00	" 7, Eccentric for Shaft ..... .60
" 4, Nut for screw ..... 6.00	

### "New Style Steel" Gang

	Black.	Galvan.		Black.	Galvan.
Screw complete .....	\$12.00	\$14.00	Rails, each .....	\$8.00	\$10.00
Nut separate .....	3.50	4.00	Top End Cross Piece...	1.00	1.20
Screw only .....	3.50	4.00	Head Block End.....	2.50	3.00
Lever and Ratchet....	2.00	2.50	Trough Cross Piece....	.75	.90
Head for screw .....	3.50	4.00	Wood Rails and Cross		
Legs for press, each...	1.50	1.75	Piece, complete .....	5.00	5.00
Cross bar for legs, each	.75	.90	Pins for set .....	1.00	1.20

### Standing Cheese Press

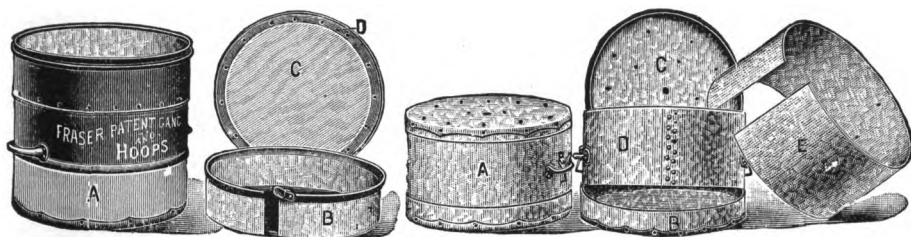
1 Screw .....	\$16.00	4 Screws .....	\$35.00
2 Screws .....	22.00	6 Screws .....	45.00
3 Screws .....	30.00	8 Screws .....	55.00

### Extras

Press screw 1¾ x 20 inches high ..... each, \$2.50  
Rods, saddles and washers .....per set, 1.50



## Gang Press Hoops



### Fraser Hoop

- A. Complete Hoop.
- B. Bandager.
- C. Follower.
- D. Fibrous Press Ring.

### Wilson Hoop

- A. Complete Hoop.
- B. Bottom Cover with Wide Flange.
- C. Top Cover with Narrow Flange.
- D. Closed Body.
- E. Bandager.

## Fraser or Wilson Hoops

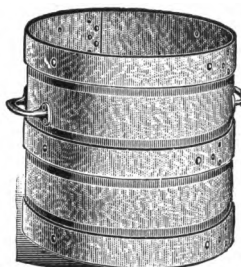
### List Prices

Size of Hoops in inches	Weight Cheese pounds	List Price	Size of Hoops in inches	Weight Cheese pounds	List Price
6 in. diam.x15. in. deep,	15 lbs...	\$2.25	14½ in. diam.x	5 in. deep, 32 lbs...	\$3.60
7 " x 7 "	10½ " ...	2.00	14½ " x 6 "	39 " ...	3.60
10 " x 5 "	15 " ...	2.40	14½ " x 7 "	45 " ...	3.90
10 " x 6 "	18 " ...	2.60	14½ " x 8 "	52 " ...	3.90
10 " x 7 "	21 " ...	2.60	14½ " x 9 "	58 " ...	4.40
11 " x 5 "	18½ " ...	2.75	14½ " x10 "	64 " ...	4.40
11 " x 6 "	22 " ...	2.85	14½ " x11 "	71 " ...	4.60
11 " x 7 "	26 " ...	2.85	14½ " x12 "	77 " ...	4.60
12 " x 5 "	22 " ...	3.00	15 " x 5 "	34 " ...	3.85
12 " x 6 "	26½ " ...	3.00	15 " x 6 "	41 " ...	4.00
12 " x 7 "	31 " ...	3.60	15 " x 7 "	48 " ...	4.00
12 " x 8 "	35 " ...	3.60	15 " x 8 "	55 " ...	4.40
13½ " x 3½ "	20 " ...	3.00	15 " x 9 "	62 " ...	4.60
13½ " x 6 "	34 " ...	3.15	15 " x10 "	69 " ...	4.60
13½ " x 7 "	39 " ...	3.15	15 " x11 "	76 " ...	4.80
13½ " x 8 "	45 " ...	3.90	15 " x12 "	83 " ...	4.80
13½ " x 9 "	50 " ...	3.90	15½ " x 6 "	44 " ...	4.40
13½ " x10 "	56 " ...	4.20	15½ " x 7 "	51 " ...	4.40
14 " x 5 "	30 " ...	3.30	15½ " x 9 "	66 " ...	5.00
14 " x 6 "	36 " ...	3.30	15½ " x10 "	74 " ...	5.00
14 " x 7 "	42 " ...	3.75	15½ " x12 "	88 " ...	5.40
14 " x 8 "	48 " ...	3.75	16 " x 9 "	71 " ...	5.25
14 " x 9 "	54 " ...	4.00	16 " x10 "	78 " ...	5.25
14 " x10 "	60 " ...	4.00	16 " x12 "	94 " ...	5.60

Above prices include Followers with fibrous press rings for Fraser hoops. Depth of Fraser hoops as given in the table is the depth below the bandager and equals the height of the cheese. In ordering hoops, if the dimensions and weight of the cheese be given, the correct size hoop will be sent.

# Cheese Making Apparatus

## Upright Press Hoops



6

### With Heavy Hardwood Followers

Hoops, 10 in. x 9 in. ....	\$2.00
" 12 in. x 8 in. ....	2.15
" 13½ in. x 6 or 7 in. ....	2.25
" 13½ in. x 8 or 9 in. ....	2.50
" 13½ in. x 10 or 12 in. ....	2.75
" 14½ in. x 10 or 12 in. ....	2.80
" 14½ in. x 8 in. ....	2.50
" 15 in. x 10 or 12 in. ....	2.85
" 15½ in. x 10 or 12 in. ....	2.90
Young America, 7 x 9 in. ....	2.00

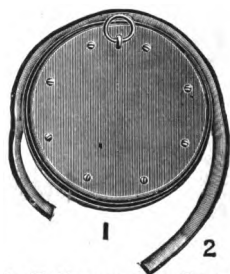
## Followers

### For Gang Press Hoops

11 to 16 inches, with fibrous press ring. ....	\$0.55
Same, Y. D. size. ....	.45

### For Upright Hoops

10 to 12 in. ....	Each, \$0.70
13 to 16 in. ....	Each, .80



1. Follower for Gang Press.  
2. Fibrous Press Ring.

## Fibrous Press Rings

They can be cut to fit any sized hoop, and give good satisfaction.

From 10 to 16-inch hoop. ....	Each, \$0.35
From 7 to 8-inch. ....	Each, .25

## Bandagers

For Y. A. Hoops. ....	Each, \$0.50
For other sizes. ....	Each, .75

## Y. A. Hoop Funnels

Price, each. ....	\$1.00
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## Speed Knives

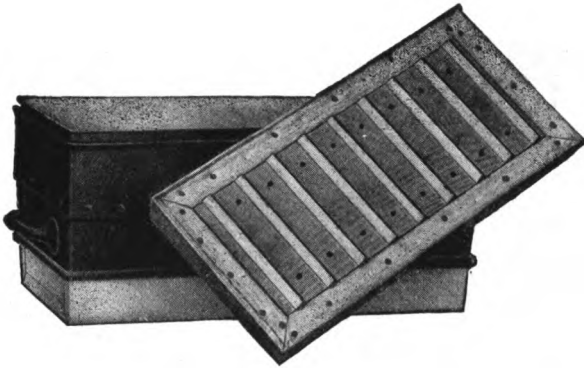
### Cocoa Handles

Just the thing to use in removing cheese from the hoops. By running it between the cheese and hoop it will separate them, leaving the cheese in good condition. Also used in taking cheese from shelves.



Length of Blade. 6 in.	7 in.	8 in.	9 in.	10 in.	11 in.	12 in.	14 in.
Price, each. .... \$0.50	\$0.60	\$0.70	\$0.80	\$0.95	\$1.20	\$1.45	\$1.70

## Twentieth Century Cheese Hoop



There is a growing demand among the better class of dealers for special shape cheese, put up in proper form to be conveniently served to their customers. There are already on the market several special brands of cheese, made in different shapes, which can be conveniently cut into one-pound bricks, of shape similar to one-pound prints of butter.

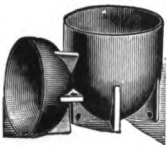
We believe that this trade is sure to increase, and that the cheese factories manufacturing high-class goods for the best market will find it very greatly to their advantage to adopt the manufacture of this special cheese. We have investigated this trade very carefully and believe that the form of cheese made in our Twentieth Century Hoop is the most desirable that can be secured.

The cheese pressed in these hoops measures 14x6 $\frac{1}{2}$ x4. The V-shape strips on the followers make a depression in the cheese, dividing it into 10 equal parts of one pound each. This enables the grocer to serve his customers with one or more pounds of cheese of symmetrical shape, and in convenient form for use. These hoops are made of galvanized iron in the most substantial manner, and are furnished complete with followers.

### Prices

Hoops, each, complete.....	\$ 3.00
Ready-made bandages, 13x6 inches, list per 1,000.....	17.00
Cloth caps, 13 $\frac{3}{4}$ x6 $\frac{3}{4}$ inches, per 1,000.....	3.45

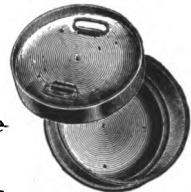
Box Material to Hold 2 or 4 Cheese Quoted on Application.



Edam.

## Gouda and Edam Molds

Gouda Mold, consisting of two parts, top telescoping into the mold.



Gouda.

Price .....\$3.00

Edam Mold, cast iron, galvanized. Better and more durable, as well as cheaper, than wood. Can be re-galvanized should the galvanizing wear off.

Price, each.....\$3.50

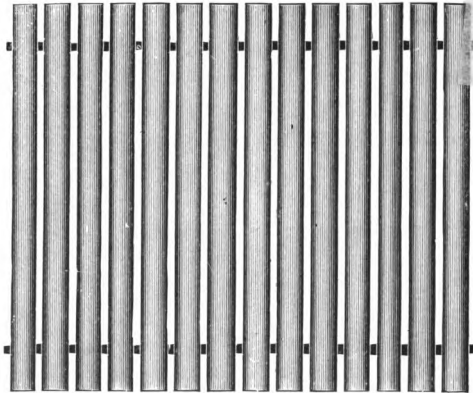
## The Acme Curd Rake



We have this rake made especially for our own trade. It is strong and substantial, having three bows. It is not a common hay rake with the handle cut off, but made for use in a cheese vat.

Price.....\$0.50

## Curtis' Improved Curd Rack



Size 41 inches wide by 30 inches long.

This is one of the very important implements used in the improved method of making cheese.

It is placed in one end of the bottom of the vat, after the whey is drawn, covered with a strainer cloth and the curd placed thereon, where it is kept warm for the acid to develop in the curd. Two or three may be used, according to the size of the vat and the amount of curd.

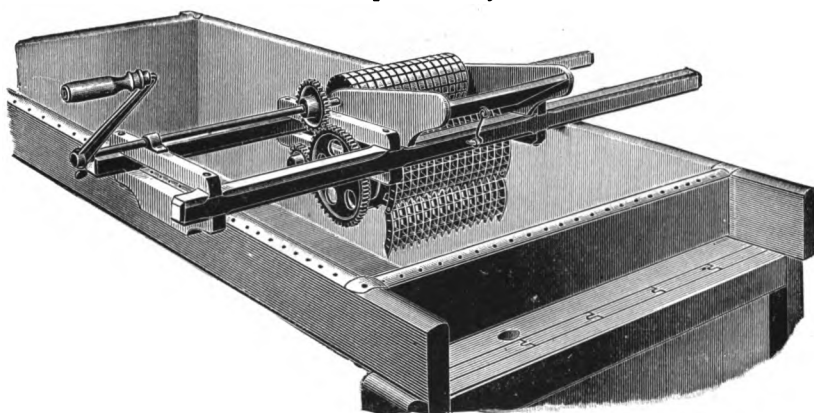
It is used at the Experimental Stations in giving instructions to cheese-makers and is pronounced faultless.

It is made in such a manner that it can be kept scrupulously clean, one of the important things with all cheese-making implements.

Price.....\$2.00

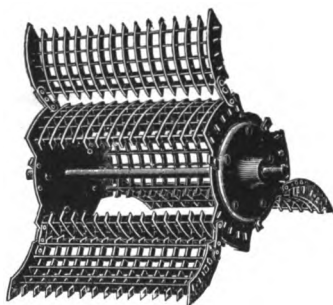
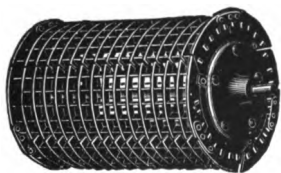
# Curd Mills

## Kasper Rotary



The demand for a large capacity Curd Mill, for cutting curd into cubes, has induced the inventor to bring out the Kasper Mill. In the construction the mill consists of a rotary cylinder made of knives in the form of cubes. Against these knives a wooden roll revolves, with indentations to fit the knives of the cylinder; the curd being fed into the hopper is forced through the openings in the cylinder by the wooden roll.

The cylinder is made in three sections, hung on hinges and, as it revolves, each section, as it comes to the lower part of the cylinder, opens and allows the curd to drop into the vat, the section closing again as the cylinder revolves, one of the three sections being always open.

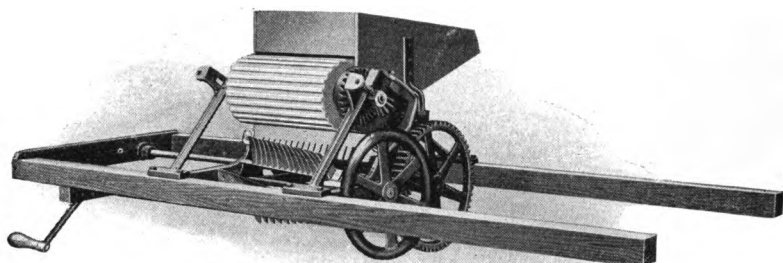


Two views of the cutting cylinder are shown herewith, the first closed, the second open.

It is estimated that the curd from 7,000 lbs. of milk can be cut in from seven to ten minutes. The mill operates easily, being light running and adjustable to either hand or belt power. Simplicity of construction, durability, and ease of cleaning are some of its principal features. All parts being galvanized, or tinned, prevents rusting. Weight of the machine complete is about 38 pounds.

List Price.....\$25.00

## The Victor Adjustable Curd Cutter



Patent Pending.

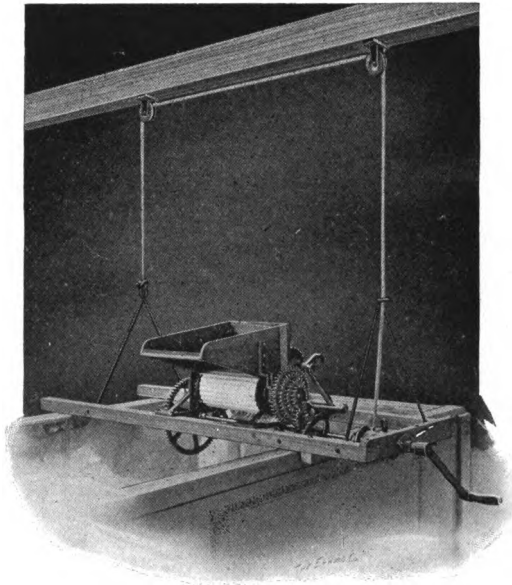
In bringing out this machine we have aimed to produce a curd mill superior in point of workmanship, construction and working qualities to any heretofore in use. The method by which the curd is cut is one that has met the approval of experts in the art of cheese making. The Victor, moreover, has an exclusive feature in the adjustment which is provided, by which the size of the cubes delivered by the machine is regulated as desired, according to the condition of the curd, the season, and the operator's judgment.

The Victor consists of a revolving knife head with two slicing and two cut-off knives attached, and two corrugated feed rolls, one with stationary bearings and the other arranged to float to and fro to accommodate the different thicknesses of curd, while at the same time both rolls are driven at the same positive speed to assure perfect feeding to the cutting knife.

The machine is equipped with a flywheel to assure a steady and uniform speed and is mounted on a substantial frame.

The operation of the cutter is to split the curd as it is fed through the rolls and then cut it off into cubes. The adjustment for size is accomplished by changing the ratio of roll speed to knife speed. In other words, while the knife revolves at a certain speed, the speed of the rolls may be changed to feed the curd fast to slow, as desired. This change of cut is made by means of a cone gear on the roll drive shaft and a pinion, controlled by a lever, which can be set to engage any one of the four gears. This feature is entirely new.

## The Victor Curd Cutter—Cont'd.



Showing Adjusting Gears and Hoist

The Victor cuts the curd; it does not tear it nor bruise it in the operation. It is practically self-feeding. As a slab of curd is put into the hopper, it is caught up by the corrugated rolls and fed through to the cutting knife. You do not have to poke the curd through. The knives have a shear, or draw cut, so the machine turns very easily.

While the Victor is designed as a hand-power machine, there are now many factories that have engines, and we have arranged to furnish the Victor for belt power, at a slight advance in cost, as shown by the price list.

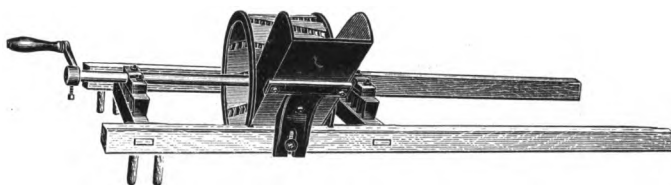
Another feature that will appeal to many is the convenient hoisting device which we furnish as an extra. The illustration on this page shows the device, which is easily set up by any one. A key or pin fixes the spool to the main shaft, when, by turning a crank, the machine is elevated overhead and out of the way. To lower, turn crank to left, which will unwind the rope until cutter rests on the vat, then remove key-pin and cutter is ready for use.

### Prices

For hand power.....	\$22.00
For belt power.....	23.00
Extra for hoist, without rope.....	2.50

## Curd Mills

Gosselin

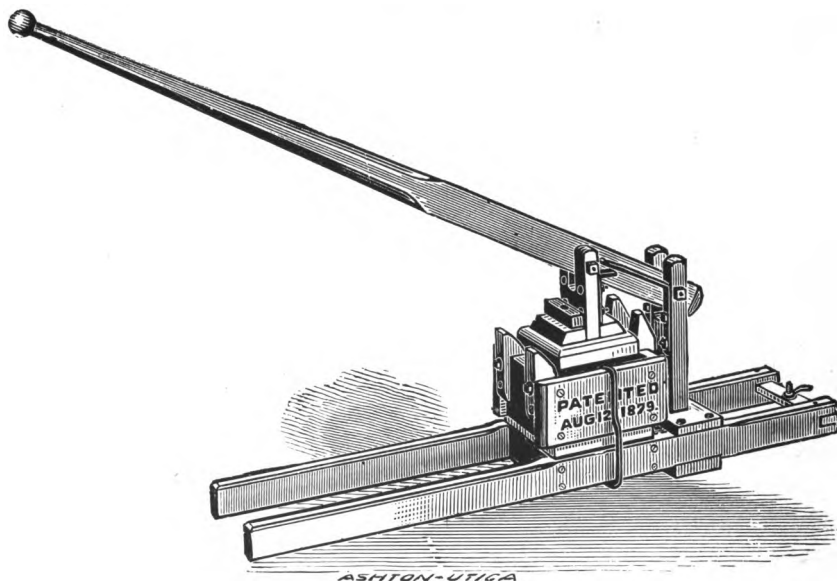


This style of mill has been used for several years in Canada. Since its introduction in this country it has proven one of the most satisfactory mills ever placed on the market. Our customers who have used it are well pleased. It shoves the curd into thin slices and at the same time slits it, getting it into the most desirable shape. Does not crush the curd. It is made strong and durable and is easily operated.

Price .....\$20.00

## Curd Cutters

"Harris"

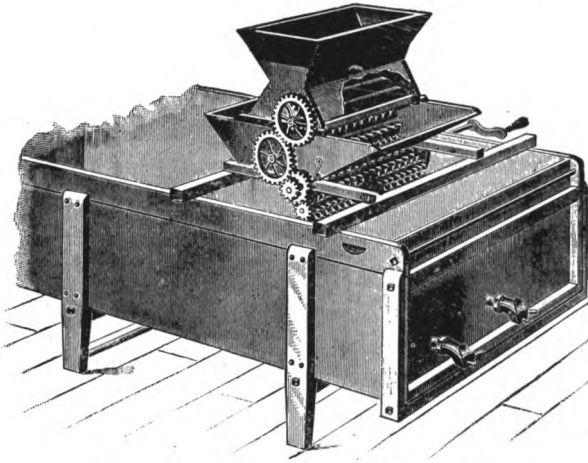


Price .....\$15.00  
Extra knives.....net, per set, 3.00



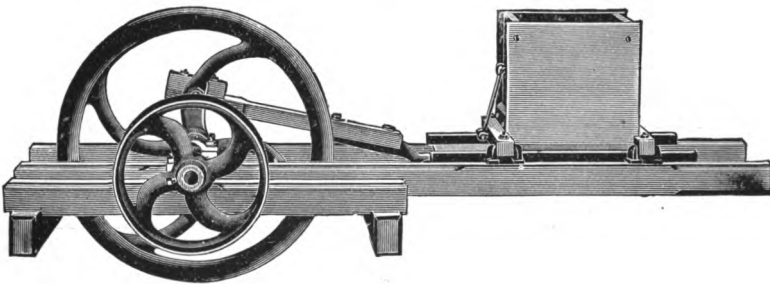
## Curd Mills

### Pohl Self-Salting



Power mill, complete, with salting attachment.....	\$27.00
Power mill, complete, without salting attachment.....	24.00
Hand mill, complete, with salting attachment.....	25.00
Hand mill, complete, without salting attachment.....	22.00

### Barnard Curd Mill



The Barnard Mill cuts the curd instead of crushing and tearing it, and possesses the advantage over other mills that cut the curd, in that the knife is attached to the plunger, thus entirely obviating bruising the curd.

Barnard Hand Mill, price.....	\$18.00
Barnard Mill, Power Attachment, price.....	20.00

# Cheese Bandage

## Ready Made

The Best—The Neatest—The Cheapest

The large increase in our trade for "Ready-Made" Bandages is the very best testimonial that could be given for them. They are being exclusively used by many of the largest cheese manufacturers in the country, and are giving the very best of satisfaction. They are carefully made from a fine grade of soft cloth and make a finer appearing cheese than any other style of bandage. The warp of cloth which we use in making these bandages runs straight both ways. There is no danger of cracking, as is the case with other bandages. We make them both taper and straight seam. The taper seam bandage is for the Fraser style hoop, and the straight seam for the old style galvanized iron hoop. In using the bandages, there is no loss in cutting. Every bandage paid for will cover a cheese. The cloth is one-half heavier than that in any other style of bandage. These two items taken into account make it the cheapest bandage.

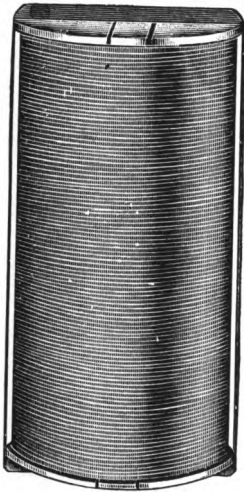
### Stock Sizes and Prices—Either Straight or Taper Seam

Size	Per M.	Size	Per M.	Size	Per M.
7 x 5	\$10.00	13½ x 5½	\$16.50	14½ x 14	\$45.50
7 x 8½	14.50	13½ x 6	18.00	14½ x 15	48.75
7 x 9	15.50	13½ x 6½	19.50	15 x 7	23.50
7 x 9½	16.50	13½ x 7	21.00	15 x 7½	25.00
7 x 10	17.50	13½ x 7½	22.50	15 x 8	26.50
8 x 8	17.50	13½ x 12	36.00	15 x 9	30.00
10 x 6	15.00	13½ x 13	39.00	15 x 13	40.00
10 x 8	18.00	14 x 5½	17.50	15 x 14	42.00
10 x 10	21.00	14 x 6	19.00	15 x 15	45.00
10½ x 6	16.00	14 x 7	22.00	15 x 16	48.00
10½ x 7½	18.00	14 x 8	25.00	15½ x 8	30.00
11 x 7	17.50	14 x 8½	26.50	15½ x 12	40.00
11 x 8	19.00	14 x 9	28.00	15½ x 14	45.00
11 x 8½	19.75	14 x 13	40.00	15½ x 18	55.00
12 x 6	16.50	14 x 14	43.00	10 lb.	15.00
12 x 7	18.00	14½ x 7	23.00	20 lbs.	18.00
12 x 8	20.00	14½ x 7½	24.50	<b>Longhorns.</b>	
12 x 8½	20.50	14½ x 8	26.00	6 x 13	\$20.00
12 x 9	21.00	14½ x 8½	27.50	6 x 13½	20.75
13 x 6	17.00	14½ x 9	29.25	6 x 14	21.50
13 x 6½	18.50	14½ x 10	32.50	6 x 14½	22.25
13 x 7	20.00	14½ x 12	39.00	6 x 15	23.00
13½ x 5	15.00	14½ x 13	42.25	6½ x 14	23.00
				6½ x 15	25.00

### "Seamless"

7 inch	Per yard, \$.....
10, 11 and 12 inch	Per yard, .....
13, 13½ and 14 inch	Per yard, .....
14½ and 15 inch	Per yard, .....
15½ and 16 inch	Per yard, .....

See Price Current for Prices and Discounts.



## Scale Boards

### For American Cheese

Our scale boards are made from the very best white wood. Boards are perfect and bundles run full count. Furnished in the following sizes:

11-inch, about 1,600 to bundle, per bundle.....	\$....
13-inch, about 1,600 to bundle, per bundle.....	....
14-inch, about 1,600 to bundle, per bundle.....	....
15-inch, about 1,600 to bundle, per bundle.....	....
16-inch, about 1,600 to bundle, per bundle.....	....

### For Swiss Cheese

26-inch, about 1,000 to bundle, per bundle.....	....
28-inch, about 1,000 to bundle, per bundle.....	....
30-inch, about 1,000 to bundle, per bundle.....	....

We furnish special sizes of round and square scale boards

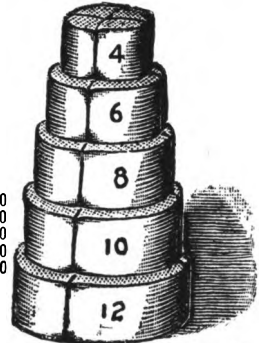
## Press Cloth Circles

These Circles are very handy. Save time and patience. Cheaper than to make them.

### Sizes and Prices

7 inch.....per M.	\$10.00	14 inch.....per M.	\$20.00
7½ inch.....per M.	11.00	14½ inch.....per M.	21.00
8 inch.....per M.	12.00	15 inch.....per M.	22.00
12 inch.....per M.	17.00	16 inch.....per M.	24.00
12½ inch.....per M.	18.00	18 inch.....per M.	32.00
13 inch.....per M.	19.00		

Other sizes furnished at proportionate prices.



## Cloth

Our Cloth is the heaviest and the best grade of goods used for this purpose. We furnish it both bleached and unbleached.

### American Cheese

28-in. bleached bandage cloth, per yd.\$....	26-in. unbleached b'dage cloth, per yd.\$....
36-in. bleached bandage cloth, per yd. ....	28-in. unbleached b'dage cloth, per yd. ....
42-in. bleached bandage cloth, per yd. ....	36-in. unbleached b'dage cloth, per yd.\$....
45-in. bleached bandage cloth, per yd. ....	46-in. unbleached b'dage cloth, per yd. ....

### Swiss Cheese

Nos.....	15	14	13	12	11	10	9	8	7
	\$1.85	\$1.70	\$1.55	\$1.40	\$1.25	\$1.05	\$0.90	\$0.75	\$0.60

### Strainer

76-inch, linen .....	per yard, \$....
----------------------	------------------

### Press

48-inch .....	per yard, \$....
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### Cheese Box and Shelf Scraper

2½-inch cutter, each, \$0.50

### Cheese Grease—Johnson's Fly Proof

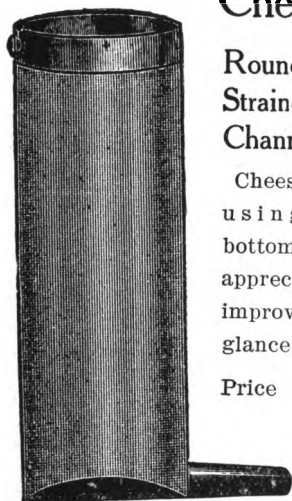
Johnson's Fly Proof Cheese Dressing is made of the very best material obtainable, regardless of cost. The dressing is not absorbed by the cheese, therefore only half as much is required as of other so called dressing which is made of poor butter and grease. Johnson's dressing does not turn rancid, and if used according to directions is absolutely fly proof.

Price .....per pail, \$....

For Prices not given see Monthly Price Current.



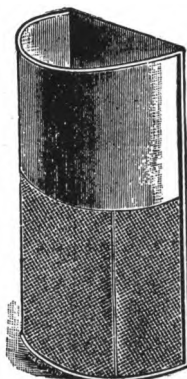
## Cheese Factory Tinware



### Round Whey Strainer for Channel Vat

Cheese makers using channel bottom vats will appreciate this improvement at a glance.

Price .....\$1.10



### Half Round Whey Strainer

For either flat or channel bottom vats.

#### Price

Without Spout

.....\$0.85

With spout . 1.00

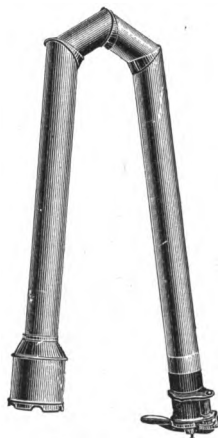
State whether for flat or channel bottom vat.

## Siphons

### Plain

Used for removing milk from one vat into another.

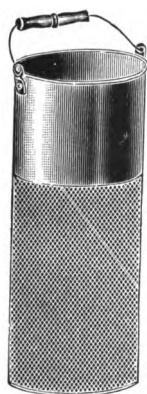
Price each .\$.085



### With Gate and Valve

This siphon, with gate and valve, will be found very serviceable where a siphon is used. It is much better than the old kind, and may be ordered with the plain strainer.

Price .....\$1.75



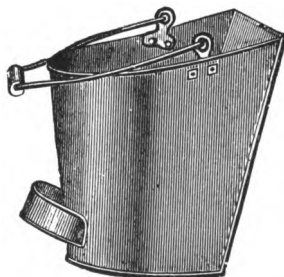
### Whey Strainer

This illustrates the oldest style of whey strainer; every cheese maker knows just what they are.

Without spout, \$0.85

With spout .... 1.00

### Flat Side Curd Pail



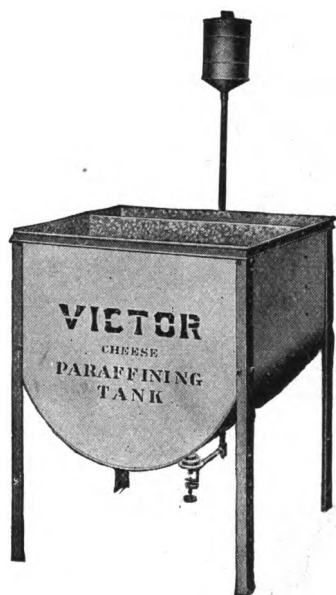
Best four-cross charcoal tin, price:

Light ...\$1.25

Heavy ... 1.50

Double the lists to obtain prices on above goods furnished in tinned copper.

## Victor Cheese Paraffining Tanks



The Victor Gasoline Paraffining Tank is designed for small factories, making a small amount of cheese and having no steam for heating. It is built of heavy galvanized iron, thoroughly braced. Burner is of our own manufacture, and will work under very slight head or pressure.

The Steam Paraffining Tank is intended for use in large factories and in commission houses where large amounts of cheese are dipped. The steam is admitted into the jacket around tank and keeps the paraffine at proper temperature. It is made in two sizes, and a large amount of cheese can be dipped and handled in the most economical manner.

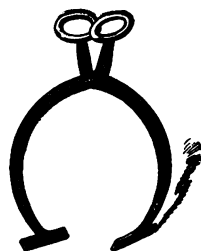


The last decade has witnessed many improvements in the manufacture and marketing of cheese. Not the least of these changes is the practice of paraffining cheese. This has so many advantages that it has been rapidly adopted by cheese manufacturers and dealers and will doubtless soon become general.

Among the benefits derived from paraffining is the saving of a large part of the shrinkage which occurs during the curing. The paraffine seals the rind and prevents evaporation. This saving is, of course, greater in the smaller sized cheese, which have a relatively large surface exposed to the air, but is profitable in the larger sizes as well.

To obtain the best results from paraffining, it is essential that temperature of the melted paraffine be evenly maintained at the proper point. Specially constructed apparatus is, therefore, necessary.

Nothing is better for this purpose than Victor Paraffining Tanks. These are made in two styles to suit the needs of different sized factories.

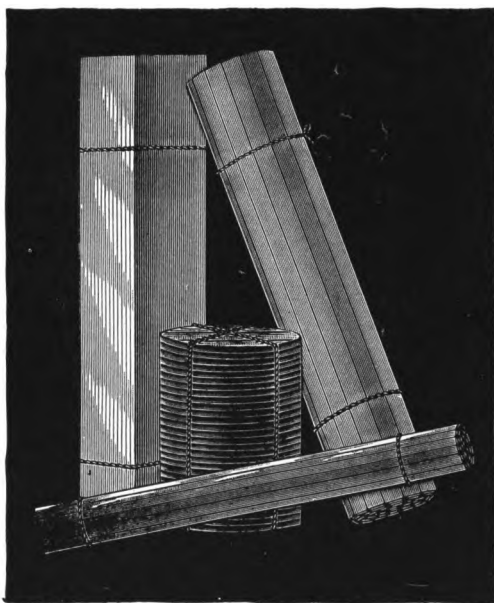


The dipping tongs enable operators to handle the cheese easily and rapidly.

### Prices

Victor Paraffine Tank, for gasoline.....	\$10.00
Victor Paraffine Tank, for steam only:	
No. 1, holds two Cheddar Cheese at once.....	15.00
No. 2, holds three Cheddar Cheese at once.....	18.00
Tongs, extra .....	1.75

## Cheese Boxes and Stock



Material complete, including tops and bottoms, body, bottom and cover rims. Weight of material for 50 complete boxes averages 250 lbs. Our hoops and rims are rotary cut, are smooth and make a first class box. We make a specialty of carload business.

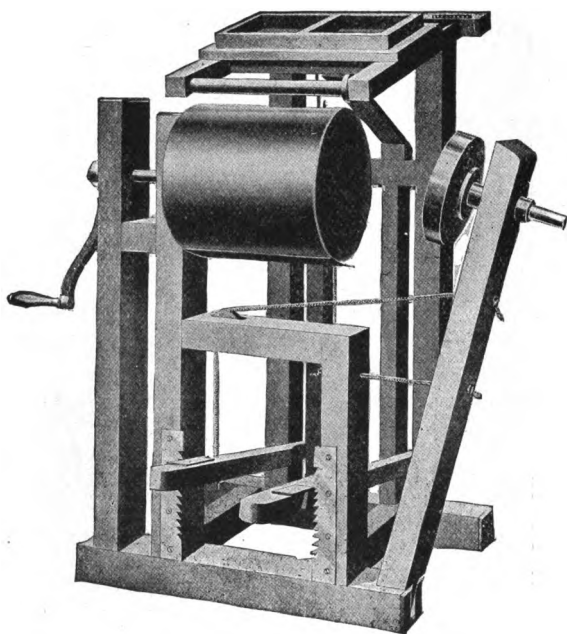
### Cheese-Box Material

				Per 100 set					Per 100 set			
14	x	4	inch	.....	\$	.....	15	x	11	inch	.....	.....
14	x	8	"	.....		.....	15	x	12	"	.....	.....
14½	x	6	"	.....		.....	15½	x	6	"	.....	.....
14½	x	8	"	.....		.....	15½	x	8	"	.....	.....
14½	x	10½	"	.....		.....	15½	x	10½	"	.....	.....
14½	x	11	"	.....		.....	15½	x	11	"	.....	.....
14½	x	12	"	.....		.....	15½	x	12	"	.....	.....
15	x	6	"	.....		.....	17	x	7	"	.....	.....
15	x	8	"	.....		.....	12½	x	6	"	.....	.....
15	x	10½	"	.....		.....	12½	x	12	"	.....	.....

### Made-up Boxes

Size	Diam.	Height	Per 100	Size	Diam.	Height	Per 100
14	x 4	inch	\$.....	15	x 11	inch	.....
14	x 8	"	.....	15	x 12	"	.....
14½	x 6	"	.....	15½	x 6	"	.....
14½	x 8	"	.....	15½	x 8	"	.....
14½	x 10½	"	.....	15½	x 10½	"	.....
14½	x 11	"	.....	15½	x 11	"	.....
14½	x 12	"	.....	15½	x 12	"	.....
15	x 6	"	.....	17	(Y. A.) x 7	inch	.....
15	x 8	"	.....	12½	(Joker) x 6	inch	.....
15	x 10½	"	.....	12½	x 12	inch	.....

## Cheese Box Machine



### The Twentieth Century

Cheese factories are often located at long distances from box factories. Factories so situated can effect a large saving in freight by buying boxes K. D. and making them up at the factory.

The Twentieth Century Cheese Box Machine has been in use in cheese-making districts for many years, and is the most practical box machine for use in small factories on the market.

It has been designed with a view to producing a machine capable of very rapid work. The nail-box is very conveniently placed on top of the frame. The crank, foot levers, etc., are all within easy reach. An expert workman can turn out about 200 boxes a day.

To obtain the best results the drum should be proportioned to the size of the box you wish to make, although it will make boxes larger than the drum.

The Twentieth Century is thoroughly well made and nicely finished. It will last for years.

We guarantee it in every way as the most economical, simple, and durable machine on the market.

In ordering machine, state size of box to be made.

Price .....	\$25.00
Extra drums, any size.....	each, 5.00





## Swiss Cheese Supplies

### "Golden Star" Schweitzer Steam Cheese Kettle

Hand planished. The cleanest, cheapest and only perfect system guaranteeing an absolute first-class cheese. No smoke, no dirt. Simple, everlasting.

#### Sizes

100-gallon	.....each \$.....	275-gallon	.....each \$.....
125 "	.....".....	300 "	.....".....
150 "	.....".....	325 "	.....".....
175 "	.....".....	350 "	.....".....
200 "	.....".....	375 "	.....".....
225 "	.....".....	400 "	.....".....
250 "	.....".....	450 "	.....".....

Prices on Application.

### "Golden Star" Schweitzer Fire Cheese Kettle

Hand planished, superior finish; correct and original shape. Sizes and prices on application.

All kettles crated. If otherwise ordered we do not insure good delivery. Crating and cartage on all kettles \$3.50 net.



## Swiss Cheese Utensils

Curd Breakers, 3 wire	.....each	\$2.00
Curd Breakers, 4 wire	.....each	2.50
Press Hoops, 4 inch to 5½ inch	.....each	2.50
Press Hoops, 6 inch to 6½ inch	.....each	3.00
Press Hoops, 6¾ inch to 7 inch	.....each	3.50
Salt Hoops, any size	.....each	1.80
Steel Bows, 6 and 7 foot	.....each	1.30
Long Handle Salt Brush	.....each	2.00
Wood Milk Skimmer	.....each	\$3.00 to 5.00
Tin Milk Skimmer	.....each	2.00
Drying Boards, 1 in. x 32 in. to 34 in.	.....each	1.20
Press Tables, 8 ft. x 3½ ft.	.....each	8.00
Press Boards or followers, 2 x 36 in.	.....each	10.00
Press Boards or followers, 2 x 32 to 34 in.	.....each	10.50
Wood Case Thermometers, V shape	.....per doz	22.00
Tin Case Thermometers, V shape	.....per doz	20.00

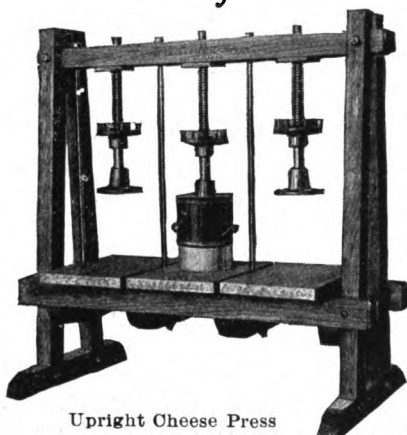
## Swiss Cheese Boxes

Furnished Either Round or Square.

26 inch x 28 inch	.....each \$.....	30 in. x 32 in. or 34 in....each \$.....
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Prices of Application.

# Dairy Cheese Making Appliances



Upright Cheese Press

## Dairy Cheese Press

Strongly made of maple and fir. Will press cheese up to 12 inches diameter. We do not include hoops with the press, but furnish them separately. There are several sizes of hoops that can be used, according to the size of cheese you wish to make. Gouda or Edam molds can be used with this press. Press is 4 feet 1 inch high and 2 feet 6 inches wide. Length depends upon number of screws. Made to order only.

No. screws.....	1	2	3
Length, inches.....	29	42	55
Price .....	\$15.00	\$20.00	\$25.00

Prices F. O. B. Wisconsin factory.

## The "Ideal" Family Cheese Making Apparatus

A very practical apparatus adapted to the wants of all farmers, dairymen and milk dealers.

The milk is heated by a coal oil lamp, which is easily kept under control. The heating vat is so constructed that the lamp gives all the heat that is necessary. The management of the heat is the secret of success in making good cheese. With each apparatus we send simple and full instructions for making cheese successfully.

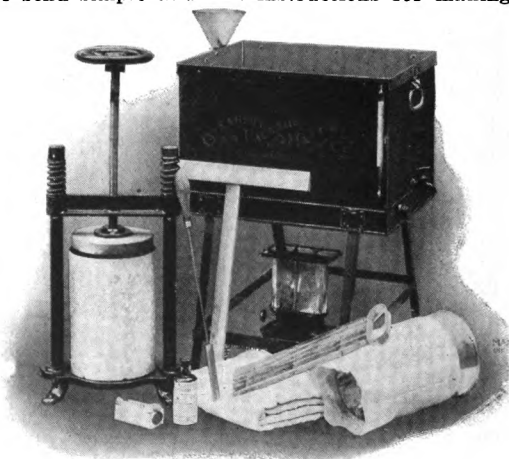
Each apparatus is complete with heating vat and iron stand, upright automatic spring cheese press, galvanized iron outer press hoop, inner tin cylinder for press, floating thermometer, Box of No. 2 "Hansen's" Rennet tablets, 4 oz. bottle "Hansen's" cheese color, No. 1 special oil lamp heater, wooden curd stirrer, horizontal curd knife, 2 yards 7-inch seamless bandage, and 1 7x10 Excelsior bandage, funnel, "Hot Iron" test iron, and in fact everything necessary for making cheese. Everything is complete.

The hoops make a 10-pound cheese.

No. 1. Cap. 10 gals., without press and hoops.....	\$10.00
With press and hoops.....	14.00
No. 2. Cap. 20 gals., without press and hoops.....	12.00
With press and hoops.....	16.00
No. 3. Cap. 30 gals., without press and hoops.....	14.00
With press and hoops.....	18.00

### Prices of Extras.

Curd knife for No. 1.....	1.00
Curd knife for No. 2 or No. 3. ...	1.50



Galvanized hoop (same size for all) .....	\$ 1.00
Tin cylinder (same size for all) ..	.50
Special lamp for No. 1.....	1.00
Special lamp for No. 2.....	2.00
Special lamp for No. 3.....	2.50
Special wicks for lamps, per yard	1.00
Press, only, for No. 1.....	5.00
Press, only, for No. 2.....	7.00
Press, only, for No. 3.....	10.00
Funnel, each.....	.25
Wooden stirrer, each.....	.40
"Hot Iron" test iron.....	.50

## Rennet Extract

The quantity of rennet required for a certain quantity of milk depends upon the degree of heat of the milk and upon the time desired for coagulating it. One pint will coagulate from 3,000 to 8,000 pounds of milk, according to heat and time.

### Chr. Hansen's Danish Rennet Extract

Considering its curdling power, it is by far the cheapest in the market.

#### Prices

Barrels of about 45 gallons .....	per gallon, \$.....
Half-barrels of 20 or 24 gallons .....	" .....
Ten-gallon kegs .....	" .....
Five-gallon kegs .....	" .....
Cases of 6 one-gallon bottles or jugs .....	" .....
Single gallon .....	" .....

### Chr. Hansen's Rennet Tablets

For cheese-making on the farm. One No. 1 tablet is sufficient for 500 pounds of milk, and one No. 2 tablet for 200 pounds. Handy to send by mail. Put up in four styles of packages at the following prices:

1 can, 100 No. 1 tablets (postage 12c extra) .....	\$.....
1 can, 200 No. 2 tablets (postage 6c extra) .....	" .....
1 box, 24 No. 2 tablets, by mail, prepaid .....	" .....

Eight cents extra for registration of mail packages.

### "Blumenthal's" Rennetine

1 pound, by mail, postage paid .....	\$.....
5 pounds, by express .....	per pound, .....
10 pounds, by express .....	" .....
25 pounds, and upwards .....	" .....

### Best "Bavarian" Rennets

We import our own rennets, and can recommend them as being a first-class rennet.

In small lots .....	each .....
In 100 lots .....	" .....
In 500 lots .....	" .....

## Cheese Coloring

### Dry—Annattoine

#### Prices

In small lots .....	per pound, \$.....	12½ and 25-pound boxes, per lb., \$....
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### Annato Seed—Best Quality

Per pound, small quantities.. \$.....	25 to 50-lb. lots .....	per lb \$....
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### Chr. Hansen's Danish Cheese Color

Produces a rich, creamy, non-fading, uniform color.

#### Prices

5-gallon jugs .....	per gallon, \$.....
Cases of six 1-gallon bottles or jugs .....	" .....
Single gallon .....	" .....
4 ounce bottle .....	" .....
4-ounce bottle, by mail .....	" .....

For Prices see our Monthly Price Current.

### Chr. Hansen's Cheese Color Tablets

For farm cheese-making.

Twelve tablets equal in coloring power to 4 ounces of Chr. Hansen's Liquid Cheese Color. Put up in vials holding 12 tablets each. Sent by mail at 30c a vial.

Box of 12 vials .....	\$3.00
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Postage, extra, 12c; registration, extra, 8c.

In ordering Please Write Your Name and Address Plainly.

## Butter Colors

### Dandelion Brand

#### Sizes

Small bottle, to color 500 lbs.....\$.....	Five gallons.....per gallon.....
Medium bottle, to color 1,250 lbs.....	Ten gallons.....per gallon.....
Large bottle, to color 2,800 lbs.....	Twenty-five gallons.....per gallon.....
Single gallon.....per gallon.....	Fifty gallons.....per gallon.....

### Hansen's Danish Butter Color

Sold only in original sealed packages put up by the manufacturers.

#### Sizes

48 one-gallon cans, in cases of 12 or 6 cans.....	per gallon, \$.....
Cases of 12 one-gallon cans.....	per gallon, .....
Cases of 6 one-gallon cans.....	per gallon, .....
Single one-gallon cans, jacketed.....	per gallon, .....



### Chr. Hansen's Danish Lactic Ferment

Lactic Ferment, being a dry powder, will keep for several months, if the seal of the package is not broken. It is therefore perfectly safe to order three packages at a time, and it is always advisable to have an extra package on hand, so as to start a fresh propagation of Startoline whenever desirable.

We advise every creamery and cheese factory to order a year's supply in advance, say three packages to be shipped every six weeks or two months, in order to take advantage of the 10 per cent rebate and to be sure not to run out of stock at any time.

Full directions are furnished with every package.

#### Price List—Large Package

Single package by registered mail, prepaid.....	\$2.00
Three packages by express, prepaid, per package.....	1.75

#### Small Package

Single package by registered mail, prepaid.....	\$0.75
Three packages by registered mail, prepaid, per package.....	.65
Ten per cent rebate if year's requirements ordered in advance, order not to be less than 18 packages.	



## Ericsson's

### Butter and Cheese Cultures

This popular culture is now furnished in either liquid or powder form. Powder culture may be kept on hand for several weeks before losing its strength. The two cultures are equal in all respects.

#### Prices

##### Powder Culture

Single bottle shipments.....	\$0.75
3 bottles in one shipment, per bottle.....	.65
Monthly shipments, per bottle.....	.65
Semi-monthly shipments, per month.....	1.00
Weekly shipments, per month.....	2.00

##### Liquid Culture

2-oz. bottle, single bottle shipments.....	\$0.50
2-oz. bottle, weekly shipments, per month.....	2.00
4-oz. bottle, single bottle shipments.....	.75
4-oz. bottle, weekly shipments, per month.....	3.00



## Skimmed Milk Powder For Starters

This Milk Powder dissolves quickly in water and produces a natural liquid skimmed milk. The method of using is as follows: Pure water is measured into the starter can and the steam turned on. While the water is heating the proper amount of milk powder is weighed out and emptied onto the surface of the water, and stirred or beaten with a stirring rod until dissolved. The heating is continued and the milk is pasteurized the same as any other starter milk. Twelve ounces of powder to the gallon of water is the proportion used. If pure water cannot be obtained from any other source, condensed steam from steam pipes can be used for re-dissolving the powder. The milk powder keeps well in dry, clean storage, and is always ready for immediate use when wanted.

#### Sizes

In 200-lb. bbls. ....	per lb., \$.....
In 50-lb. boxes (tin lined).....	per lb., .....
In 10-lb. cans (½ doz. in case).....	per lb., .....

#### Prices on Application.

# Salt

A White "Flaky" Grain, not too Fine: made from Brine 99½ per cent Pure, Easily Dissolving and an excellent "Keeper," describes

## Moulton's Cadillac Salt

### Butter Salt

320-lb. barrels .....	\$.....
5 barrel lots .....	discount, ....
10 barrel lots .....	discount, ....
56-lb. sacks .....	each, ....
5 sack lots .....	discount, ....
10 sack lots .....	discount, ....



### Cheese Salt

280-lb. barrels .....	each, ....	10 barrel lots .....	discount, ....
5 barrel lots .....	discount, ....		

## Ashton's

224-lb. sacks .....	each, \$....	56-lb. sacks .....	each, \$....
25 or more .....	each, ....	25 or more .....	each, ....



## Diamond Crystal Butter Salt

224 lbs., in linen sacks, 1 to 10 .....	each, \$....
10 or more .....	each, ....
280-lb. barrels, 1 to 10 .....	each, ....
10 or more .....	each, ....
56 lbs., in linen sacks, 1 to 10 .....	each, ....
10 or more .....	each, ....

### Cheese Salt

280-lb. barrels .....	each, \$....
10 or more .....	each, ....

## Worcester

### Butter Salt

280-lb. barrels .....	each, \$....
10 or more .....	each, ....

### Cheese Salt

280-lb. barrels .....	each, ....
10 or more .....	each, ....

### Paste Salt

320-lb. barrels .....	each, ....
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Can furnish full cars of dairy, or mixed cars of dairy and barrel salt. Write for prices

## Cleansing Compounds

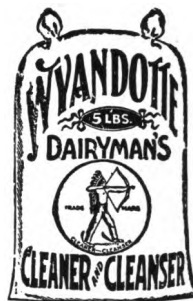
### Wyandotte

#### Dairyman's Cleaner and Cleanser

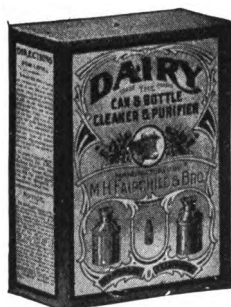
For cleaning and purifying bottles, separators, churns, tables, floors, and everything about the creamery or dairy. Contains no caustic. Does not roughen the hands. It is the natural enemy of grease. Prevents rust and corrosion.

#### Sizes

	per lb.		per lb.
280 lb. bbls. ....	\$ .03	80-lb. kegs .....	\$ .04
5 bbl. lots .....	.02%	Bbls. containing 50	
10 bbl. lots .....	.02%	5-lb. sacks. per bbl.,	8.50



Fac-simile of 5-lb. Sack.



### "Dairy"

#### Can and Bottle Cleaner and Purifier

For the perfect cleansing of creameries, milk depots and all utensils used therein. Made to comply with the pure food laws. Pure and harmless. Cheaper than soap powder, lye, soda or soap.

#### Sizes

100-lb. cases in packages, each package containing 4 $\frac{3}{8}$  lbs., 24 packages in case, per lb. .... \$....  
Also packed in 170-lb. kegs and 285-lb. barrels, per lb. ....

### Gold Dust

#### For Cleaning Purposes

Box containing 24 4-lb cartons ..... per lb. \$....  
Five box lots .....

### Sal Soda

#### For General Cleaning Purposes

Per pound ..... \$....  
Kegs, about 150 lbs. ....

### Disinfectant

#### "Kno-Germ"

"Kno-Germ" is an odorless disinfectant and does not kill a bad smell with some stronger odor. It makes oxygen and purifies all foul places. A little of it goes a great ways. Free samples will be found in each case of "Dairy" Cleaning Powder.

"Kno-Germ" is the cheapest but most powerful disinfectant made.

1-lb. packages ..... per lb. \$.... 5-lb. packages ..... per lb. \$....

### Metal Polish

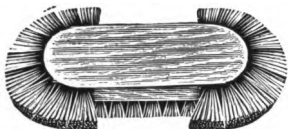
#### "Fairchild's Brilliant"

This polish is in the form of a powder. It is easy to use and imparts a brilliant polish to engine trimmings, separator parts, tinware and all smooth metal surfaces. Put up in 1-lb. packages.

Price, each ..... \$.... Per dozen ..... \$....

See Price Current or Write for Prices.

## Brushes and Mops

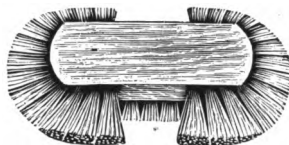


Each. Doz.

Can Brush, Face Size.

9 in. x 5 in.

Jupiter (Jersey) Palmetto	.....	.....
Prince, Tampico	.....	.....
Rice Root	.....	.....

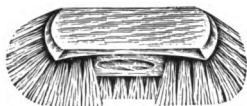


Each. Doz.

Can Brush, Face Size.

9 1/2 in. x 5 1/2 in.

Hercules (Holstein) Palmetto	.....	.....
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Can Brush, Face Size.

8 in. x 4 in.

Rice Root, Best Grade, Each....Doz....



Scrubbing Brush, Face Size.

10 in. x 2 1/4 in.

Hub, Palmetto .....Each.... Doz....



11 in. Rice Root, medium grade .....Each.... Doz....



No. 32 Scrub, 11 in. Tampico ..... Doz....



Palmetto Scrubbing.

Duck, Face Size, 7 in x 2 3/4 in. ....Each.... Doz....

Goose, Face, Size, 10 in. x 2 3/4 in. ....Each.... Doz....

Alligator, Face Size, 12 in. x 2 3/4 in. ....Each.... Doz....



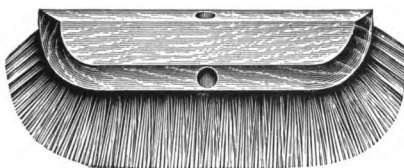
Face Size, 5 in. x 2 1/2 in.

Midget, Tampico. .... Doz.

Dwarf, Palmetto. .... Doz.



Palmetto, Sanitary. Gong, 6 in. x 4 in.



Half Round Floor Brush.

Each Doz.

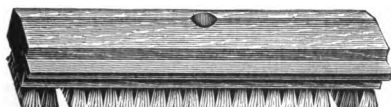
Palmetto 14x4 1/2	.....	.....
Rice Root 12x4	.....	.....



Wood Mops or Squilgees.

Each Doz.

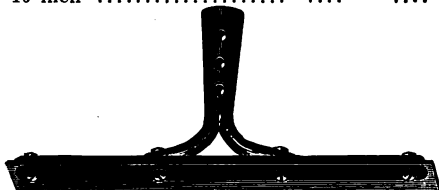
12-inch	.....	.....
14-inch	.....	.....
16-inch	.....	.....



Combined Floor Brush and Mop.

Each Doz.

Tampico 12x2 1/2	.....	.....	14-inch	.....	.....
Mop Rubbers, any thickness and width, per lb.	.....	.....	16-inch	.....	.....
Brooms, heavy warehouse	.....	.....	each, \$0.55; per doz., \$6.00	.....	.....



Iron Mops or Squilgees.

Each Doz.

## Brushes—Special



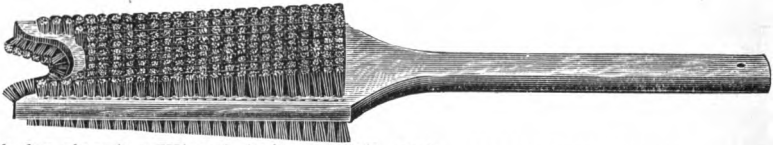
Brush for cleaning hub of Farrington Pasteurizer, each.....



Small Brush for cleaning Pasteurizer Discs, each.....



Large Brush for cleaning Pasteurizer Discs, each.....



Brush for cleaning Wizard Agitator Coil, each.....

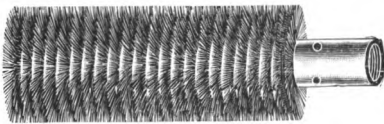


Brush for cleaning Eclipse Ripener Coil, each.....



Large Spout Brush, 30 inches long, tuft end, for power separators.  
Each ..... Per doz.....  
Small Spout Brush, 13 inches long, tuft end, for hand separators.  
Each ..... Per doz.....

### Wizard Sanitary Pipe Brush



Stiff bristles, brass head, screws onto gas pipe of size given. By attaching hose to gas pipe handle water may be sprayed into tube through perforations in brush head. Head may be filled at small expense.

Dia. Tube.	Handle.	Price.	Price to Refill
1 inch	3/4 inch	\$1.25	\$0.35
1 1/4 inch	1 inch	1.50	.40
1 1/2 inch	3/4 inch	1.75	.50
2 inch	3/4 inch	2.00	.60
2 1/2 inch	3/4 inch	2.50	.75

### Sanitary Pipe Brush



Stiff bristle, tuft end, with twisted wire handle, six feet long.

Small, for piping, 1 in. diameter and smaller, each.....	\$0.50
Medium, for piping, 1 1/2 in. diameter and smaller, each.....	.60
Large, for piping, 2 1/2 in. diameter and smaller, each.....	.75



## Milk Bottle Brushes



**Large Ideal**, for machine work.  
Each ..... Per doz.....



**India Bristle**, for hand work only.  
Each ..... Per doz.....



**Refiance**, improved shape for hand or machine.  
Each ..... Per doz.....



**Special Brush**, with large handle or shank; used in 3-spindle washer.  
Each ..... Per doz.....



**Small Ideal**, for hand work.  
Each ..... Per doz.....



**Horse Hair**, for hand work only.  
Each ..... Per doz.....



**Daisy**, for hand work only, curved handle, tuft end.  
Each ..... Per doz.....



**Special Outside Brush**, used to wash outside of bottles; for 3-spindle washer.  
Each ..... Per doz.....

## Test Bottle Brushes, Etc.



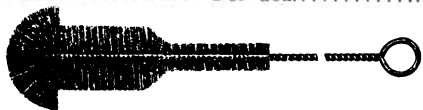
**Babcock Milk Test Bottle Brush**.  
Each ..... Per doz.....



**Babcock Cream Test Bottle Brush**.  
Each ..... Per doz.....



**Curtis Test Tube Brush**, white bristle, 14 inches long.  
Each ..... Per doz.....



**Improved Test Bottle Brush**  
For Milk Test Bottles.  
Each ..... Per doz.....  
For Cream Test Bottles.  
Each ..... Per doz.....

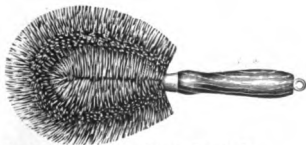
## Miscellaneous Brushes



**Flow Tube Brush**, for bottle filler valves.  
Each ..... Per doz.....



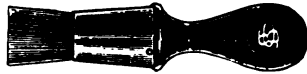
**Air Tube Brush**, for bottle filler valves.  
Each ..... Per doz.....



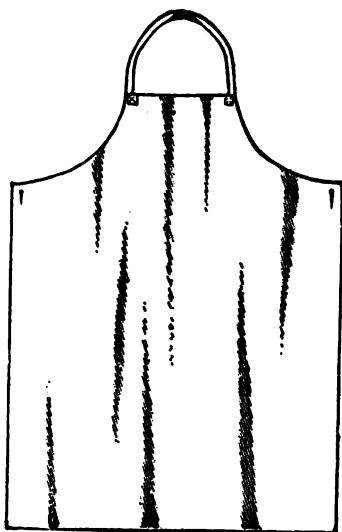
**India Fiber Can Brush**.  
Each ..... Per doz.....



**Sample Bottle Brush**.  
For 2 oz. sample jars.  
Can be used with machine.  
Each ..... Per doz.....



**Stencil Brush**.  
Large.  
Each ..... Per doz.....  
Small.  
Each ..... Per doz.....



## Aprons

### Heavy Canvas

Made of special woven heavy duck, lined with heavy sheeting, thoroughly oiled and durably made; are finished with cloth shoulder straps, and leather strap and buckle to fasten around waist.

Length, 50 inches; width, 38 inches.

In yellow or black.

Price .....each, \$1.25

### Fish Brand

These aprons are made from canvas and are heavily oiled. They have been thoroughly tried in and about creameries and cheese factories and give universal satisfaction.

Price, No. 1, long; No. 2, medium; No. 3, short, each.....\$0.85

### Rubber

Large rubber aprons are much used by butter and cheese-makers to protect their clothing while at work. With fair usage, one will last a long time. Just what is needed when making composite tests, as acid will not affect the rubber.

Light Black .....each, \$1.50

Heavy Black .....each, 1.75

White, best grade .....each, 3.00

## Wood Sole Shoes

Wood is a non-conductor, consequently is much dryer and a great deal warmer in winter and cooler in summer than any leather sole shoe. The best footwear for farmers, and dairymen. They are light and at the same time more durable than a leather sole shoe.

The uppers are made of the best Milwaukee Oil Grain, shoes are well shaped, are exact and comfortable fit, and being fitted with patented fastening, are waterproof.

### Prices—Reimer Brand

Per pair .....\$2.25

Boots, per pair .....3.50

Metal rails on soles, extra......25

### Standard Brand Wood Sole Shoes

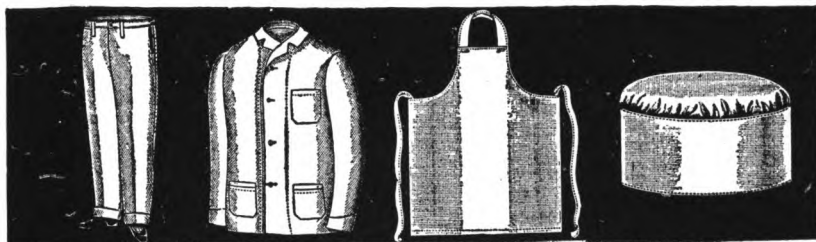
Price, per pair .....\$1.75

In ordering shoes or boots give size wanted.



# White Duck Suits

For Butter and Cheesemakers



Pants

Coat

Apron

Cap

These are first-class in every particular. They are made from the best Pullman White Duck. Nothing has a better effect on the patron than a clean factory and a clean maker.

In ordering give chest, waist and inside leg measures.

## Prices

Cap .....	\$0.25	Apron .....	\$0.50
Coat .....	1.25	Full Suit .....	3.25
Pants .....	1.50	Two suits for.....	6.00

## Oiled Apron-Pants

Challenge Oiled Apron-Pants are manufactured of fine, strong cloth specially woven from carefully selected, long, staple cotton, heavily and thoroughly oiled and very durably made, producing a popular, reliable oiled pants. Have patent eyelet fastened zinc buttons, with smooth backs, preventing the catching or tearing of clothing, and will not rust or corrode.

Size 1—	waist	40	leg	31
" 2	"	38	"	30
" 3	"	36	"	29

Made in yellow.....	\$1.25
Made in black.....	1.50

## Rubber Gloves

Net-Lined, best on the market. For use in handling acid and making milk and cream tests.

### Price—Only One Size

Light, Short, each, \$1.50, with Gauntlet.....	\$2.00
Heavy, Short, each, \$1.75, with Gauntlet.....	2.25



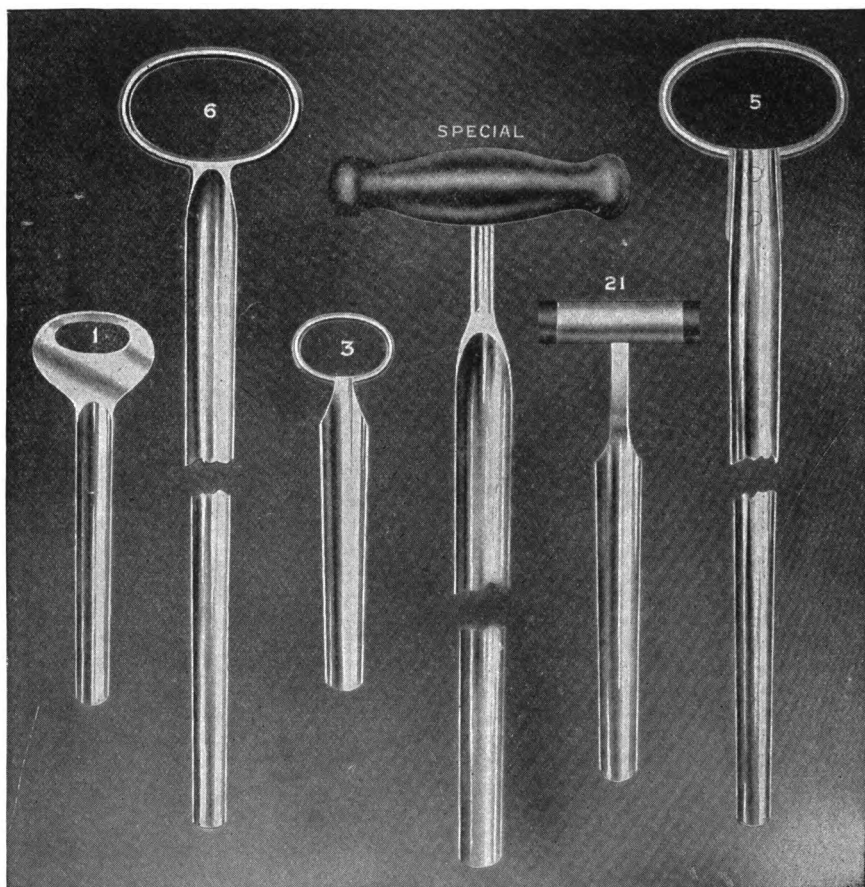
## Finger Cots

### Assorted Sizes

Very convenient when making tests.

Light, per doz.....	\$1.00
Heavy, per doz.....	1.50

## Butter and Cheese Triers



### Cheese Triers

	Each
No. 1 Solid cast steel, flat handle, $4\frac{1}{2} \times \frac{5}{8}$ -inch.....	\$0.50
No. 3. Solid forged steel, japanned handles, plug $\frac{3}{4}$ -in. diameter, 5 in. long.....	1.00
Same as above, 6 inches long.....	1.10
No. 4 Same as No. 3, but full polished and extra finished, 5 in. long.....	1.25
Same as above, 6 inches long.....	1.35
No. 21 Rosewood T' handle, extra finished silver steel, 5 or 6 in. x $\frac{3}{4}$ in....	2.00
Same as above, with leather case.....	3.00
Above triers, if nickel plated, extra.....	.15

### Butter Triers

	Each
No. 6. Solid forged steel, japanned handles, 18-inch, \$2.25; 21-inch.....	\$2.50
Extra for polished handles, \$0.30; nickel plated, extra.....	.35
No. 5 Steel trier, malleable handle, 18-inch.....	.90
No. 0 (See cut No. 5) steel blade, malleable handle, nickeled, 18-inch.....	.75
SPECIAL—Cold storage trier, extra heavy, with large handle.....	3.00

# The Marshall Rennet Test

Simple      Reliable

Indispensable to Every Cheesemaker



The Marshall Rennet Test is not intended for use by the chemist in the laboratory, but for the practical cheese-maker, enabling him, in a simple, practical way, to ascertain the condition of his milk, and as a guide for the manipulation of the milk and the curd in the vat.

What the cheese-maker needs is not so much an exact chemical determination, as it is a guide, showing him the comparative condition of his milk, its variations from one day to another, so that he can regulate matters and arrange the manipulations of the milk and the curd, with the view of making a uniform product.

## Directions

As soon as the milk in the cheese vat is heated to the proper temperature, usually 86 deg., measure off with the pipette (b) one cubic centimeter of Rennet Extract, filling the pipette to the mark on the stem, and empty it into the little glass (c) previously about half filled (to the mark) with pure, cold water, free from lime or alkali (boiled water or condensed steam, cooled to ordinary temperature, is the best). Rinse the pipette by drawing water into it from the glass (c), and let the rinsings run back into the glass. Mix well by shaking the glass.

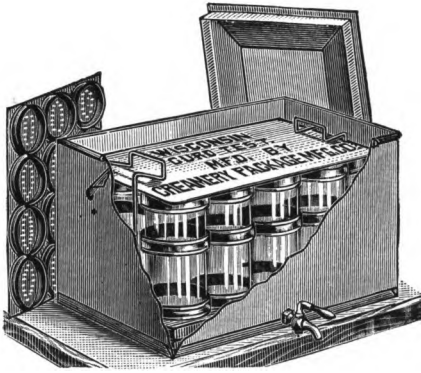
See to it that the little outlet tube in the bottom of the cup (a) is clean and free from obstructions. Stir the milk in the cheese vat and fill the cup (a), by dipping it down in the milk. Place it on a level board so that the milk will run out through the outlet in the bottom. Take the glass of diluted Rennet Extract in one hand and the spatle (d) in the other. Watch the level of the milk in the cup, and the moment it drops to the (o) mark, pour in the diluted Rennet Extract and stir it in well. Then leave it alone.

When the milk stops running, read off on the graduated scale how much milk has run out.

Price, complete .....\$2.50

Send for Circular containing complete description

## Wisconsin Curd Test



Cheese-makers are often troubled with gassy or floating curd, which makes defective cheese, creamerymen and milk dealers are perplexed with tainted milk without means of finding the source of the trouble. These faults come from some particular lot of milk which contains impurities. The Wisconsin Curd Test detects these defects and enables the cheese-maker, creameryman or milk dealer to trace the fault to the dairy, and the very cow which causes the trouble.

### How to Make the Test

Thoroughly cleanse the jars with live steam or scalding water. Take the rack of jars to the taking-in room; take a sample of milk from the patron, numbering the jar to correspond with the patron's number on the milk sheet, fill the jar about two-thirds full, continue until all the jars in the rack contain a sample. Put on the tight covers and put the rack in the vat. Fill vat with water as high as the milk in bottles, set an oil stove under the vat and heat the water in the vat to 100 degrees F. Take out the rack with jars and shake occasionally. When the milk reaches 98 degrees F. add 10 drops of rennet extract to each jar, shake the rack with a rolling motion, and after the milk curdles let it stand about 20 minutes, or until firm, then cut the curd fine with a thin knife, rinsing the knife thoroughly for each jar. When the curd settles, take the perforated covers and put them on top of the jars, then turn the rack bottom side up and shake gently until all the whey has run off. Let it stand a few minutes in the vat and then repeat the operation until all the whey is drained off. The more completely the whey is drawn off the better the test. Put tight covers on jars and return to vat. Now regulate the wick of the oil stove to hold the temperature at 98 degrees F.

Let the bottles stand from 6 to 12 hours, then open the jars, drain off what whey remains and cut the curd in two pieces; take them from the jar, and those curds having a spongy texture, or bad odor, can be detected by smell, thus showing which patron is furnishing the bad milk. Now take the rack of jars to the patrons' barn and take a sample of milk from each of the cows and test them the same as above; this will locate the identical cow that is causing the trouble.

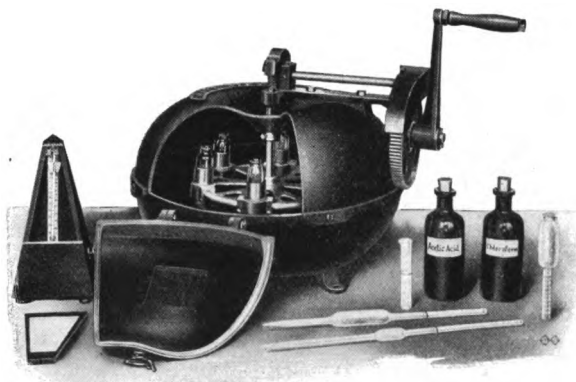
### Prices

One Dozen Bottle Test, without table.....	\$12.00
Two " " " " " " .....	15.00

### Extras for Wisconsin Curd Test

Bottles, per dozen .....	\$1.00
Vat for 2 dozen bottles.....	3.00
Vats for 1 dozen bottles.....	2.50
Bottle strainer for 2 dozen.....	2.00
Bottle strainer for 1 dozen.....	1.75
Cover for 2 dozen bottles.....	1.50
Cover for 1 dozen bottles.....	1.25
Bottle Frame or Support for 2 dozen.....	3.00
Bottle Frame or Support for 1 dozen.....	2.50
Faucets, each .....	.25

## Hart's Casein Test



Hart's Casein Test is a method of determining the per cent of casein in milk. The method is very simple and it requires but a short time to make a determination. Numerous cheese factories have adopted it, and by using both fat and casein tests are enabled to pay for milk on the basis of its actual worth for cheese making purposes. The necessary apparatus consists of:

- |                            |                                     |
|----------------------------|-------------------------------------|
| 1 Centrifuge,              | 1 5-CC. Pipette,                    |
| 1 Metronome,               | 1 2-CC. Graduate Measure,           |
| 6 or 12 Casein Test Tubes. | 1 25-CC. Measure for Acetic Acid,   |
| 1 20-CC. Pipette,          | 1 1000-CC. Flask for Diluting Acid, |

Supplies used in testing are chloroform and acetic acid. We furnish one pound chloroform and one quart 10 per cent. acetic acid with each tester. Also we include complete directions for making tests.

The Centrifuge is of the very best construction, being especially designed for this test. The gears are all machine cut, making them perfectly true and arranged to give the necessary high speed to the head at 55 to 56 turns of the handle per minute.

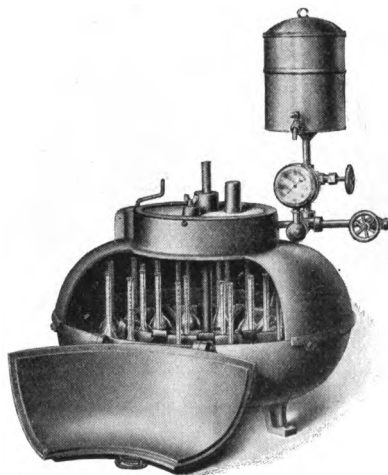
The bottle-head or wheel is especially designed to stand the high speed necessary, and the bottle cups are made of seamless brass and very heavy.

Price, complete apparatus, 6-bottle .....	\$30.00
Price, complete apparatus, 12-bottle .....	40.00
Chloroform, per pound .....	.50
10 per cent acetic acid, per quart .....	.25
Casein Test Tubes, per dozen .....	3.00
20cc. Pipette, each .....	.25
5cc Pipette, each .....	.20
2cc. Measure, each .....	.15
25cc. Measure, each .....	.20
1,000 cc. Flask, each .....	1.00

Write for Special Descriptive Circular.

## Babcock Milk Testers

### "Wizard" Turbine



Sizes 1, 2 and 3

The mechanical principles employed in the construction of **Wizard Testers** are absolutely correct. The solid cast iron framework forms the groundwork for a practically indestructible machine. Two bearings, top and bottom, with all the weight between, insure absence of vibration, so necessary for a perfect test. The steam turbine is at the top of the frame in a separate case, but below the top bearing. The power is applied in such a manner that the tester literally "runs like a top."

Bearings are renewable, and when worn may be replaced at trifling expense. Pockets are of seamless brass, are easily removed if desired, but when in motion are firmly locked and cannot by any possibility fly off and cause accidents. The bottle head and turbine wheel are perfectly balanced on the spindle, and a high speed can be attained without noise, jar or friction.

In point of economy the **Wizard** excels all others. Usually a tester wastes more steam than actually is required to drive the machine. Having a steam wheel but seven inches in diameter, the steam pressure required to drive the machine is correspondingly less than machines having steam wheels from 14 to 18 inch diameter.

In stopping the machine a spring brake is used. This brings the bottles to rest without jarring or overheating them and without wasting any steam. The only wearing part of this brake is simply a piece of metal that anyone can renew, but with ordinary usage will wear for a long time.

In testing milk and cream, temperature is of the utmost importance. It has been demonstrated by experiment station authorities that milk and cream tests should be made and readings taken at from 120 to 140 degrees. At higher temperature the tests will show more fat than the samples actually contain—due to the fact that the fat column is unduly expanded by the heat. On the other hand, skimmed milk and buttermilk should be kept very hot while testing in order to bring up all the very small fat globules. The varying requirements for testing different milk products are all provided for in the **Wizard**.



# Babcock Milk Testers

## "Wizard" Turbine



Sizes 4, 5 and 6 Mounted on Special Stand

height. It rests on three legs and is very strong and rigid. It is made to fit any size Wizard Tester. Not furnished unless ordered. If ordered separately, state size tester you want it for.

The turbine being in a separate case, no exhaust steam enters the bottle chamber—unless the operator so desires. Ordinarily, for milk and cream testing, no heating is needed, but when for any reason, as in winter, it is desired to heat the bottles, the exhaust steam, or as much of it as needed, may be diverted into the bottle chamber by turning the damper in the exhaust outlet. The cover opening is relatively small and the tests will remain warm until readings are made. The cover opens downward and cannot fall shut or break. The bottles swing out into the door space directly under the operator's hand.

These testers are built in six regular sizes, three using the six and one-half inch regular Babcock milk and cream test bottles and three built larger in diameter and heavier to accommodate the nine-inch bottles now generally used for cream testing. These larger testers will also use the regular length bottles.

Each tester is complete with a full set of test bottles. We guarantee these bottles to be correctly calibrated and accurate in every respect. Equipment also includes hot water reservoir, steam gauge, acid measure, funnel, pipette and bottle brush.

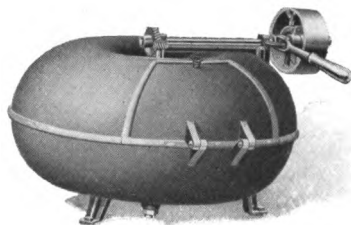
We furnish, when desired, the special iron stand shown in cut. This raises the tester to a convenient

### Sizes and Prices

No. 0—12 bottle tester for 6½ inch bottles.....	\$30.00
No. 1—24 bottle tester for 6½ inch bottles.....	35.00
No. 2—32 bottle tester for 6½ inch bottles.....	40.00
No. 3—40 bottle tester for 6½ inch bottles.....	45.00
No. 4—24 bottle tester for 9 inch bottles.....	50.00
No. 5—32 bottle tester for 9 inch bottles.....	55.00
No. 6—40 bottle tester for 9 inch bottles.....	60.00
Iron stands extra, each.....	5.00

## Wizard Belt Driven Babcock Tester

This type of tester is used where steam supply for turbine is not available. It is substantially the same as the Wizard Turbine machine. The pulley is of the friction clutch type, and the power can be turned on gradually, so as not to break the glassware. It is noiseless in operation.

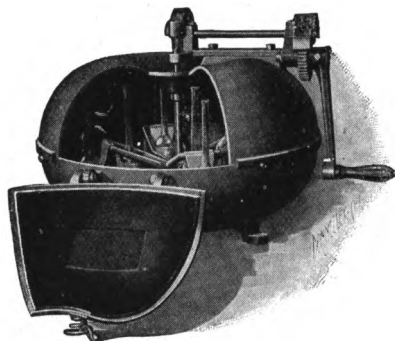


### Sizes and Prices

Belt-driven testers are made in the same sizes as turbine testers and the same prices apply.

# Babcock Milk Tester

## The "20th Century" Hand



This tester is built on the same lines as the Wizard. It is intended for hand use on the farm, in the cheese factory and creamery, or anywhere it is desired to test and the necessary steam apparatus for running steam turbines is not available. It fills completely the demand for a high speed, accurate, durable, easily operated hand power tester, by which either those who sell or purchase milk can tell its true value.

This tester has two bearings, top and bottom, giving perfect balance and freedom from vibration. The power is transmitted by spur and worm gear, giving the high speed necessary for a perfect test without noise or unnecessary friction.

Special attention is called to the covered gears, compactness and neat construction of this machine. All gears are cut in special milling machine, not cast; are absolutely accurate, and therefore noiseless in operation. The bottles being enclosed within an unbreakable frame, there is no danger to the operator should one of the bottles break while whirling. When necessary to heat the bottles, hot water may be put inside the bowl. It is, in short, as nearly perfect as a hand power tester can be made.

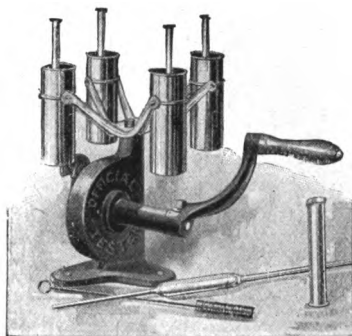
With each tester is included a full set of test bottles, acid measure, bottle brush and directions.

### Sizes and Prices

6-bottle .....	\$ 9.00
8-bottle .....	10.00
10-bottle .....	12.00
12-bottle .....	14.00
24-bottle .....	25.00
12-bottle for 9-inch bottles.....	30.00
24-bottle for 9-inch bottles.....	40.00

# Babcock Milk Tester

## The "Official" Hand



Many thousands of "Official" testers have been sold. It is used by dairymen, farmers, in hotels and restaurants and in the laboratory. It does accurate work, and with the instructions furnished anyone can make a perfect test. The most convenient and most accurate of any low priced hand tester ever offered.

Many creamerymen have found it to their advantage to push the sale of these testers among their patrons. When the patron has at hand a ready means of testing his milk or cream before sending to the creamery, he is less liable to question the test returned from the factory. It is also very desirable to test each cow at frequent intervals to determine whether profitable or not. Most every herd has some cows in it that do not pay for the feed they eat. If cows are tested and the unprofitable ones disposed of, more net profit is made. In other words, a small herd of good cows will produce a larger profit than a large herd of average cows. It is good business policy for any creameryman to encourage the use of these testers by his patrons.

The "Official" is sold at a low price, but it is not a cheaply constructed tester. It is noiseless in operation, the motion being transmitted through a spur and worm gear. The bottle cups are of brass and so pivoted to the heads that they cannot by any possibility fly off when in motion. The bottle head and cups are removable—in fact, the whole apparatus can be taken apart in a few seconds and packed in small compass. The frame can be fastened solidly for use in either of two ways—by screwing down to a table or bench, or it can be clamped to the edge by the thumb screw and clamp and when test is over easily removed and put out of the way.

Made in two and four bottle sizes. Each tester includes a full set of bottles, pipette, acid measure, test bottle brush, acid and full directions for making tests.

### Net Prices

No. 1—2 bottle, with necessary glassware, for milk.....	\$4.00
No. 2—4 bottle, with necessary glassware, for milk.....	5.00
No. 3—2 bottle, with necessary glassware, for both milk and cream.....	4.50
No. 4—4 bottle, with necessary glassware, for both milk and cream.....	5.50

## Electric Motor Testers



We are prepared to furnish testers driven by electric power when desired. These testers are the same style as the 20th Century, the motor and starting box being mounted on the tester frame. Each tester has a range of speed from 200 to 1,200 revolutions per minute. Either alternating or direct current motors furnished. Owing to the fact that voltage varies with each installation, we do not carry them in stock; neither can prices be quoted without full information. Made in 6, 8, 10, 12 and 24 bottle sizes.

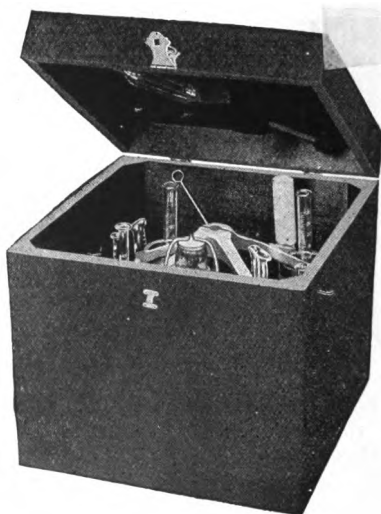
Write for Prices

## The "Official"

### Travellers' Babcock Testing Outfit

The Official Traveller's Testing Outfit is designed to meet the requirements of traveling dairy inspectors, separator agents and others who have occasion to make tests of milk and therefore require a portable outfit that shall be compact, light and at the same time accurate. We include in this outfit one of our Official Testers, which are so widely known as to make an extended description unnecessary. With each outfit is included the following apparatus:

- |   |  |
|---|--|
| 1 Official Tester                         | 1 Dairy Thermometer                            |
| 4 Full Milk Test Bottles                  | 1 Bottle Testing Acid                          |
| 2 Double-bore Skim and Buttermilk Bottles | 1 Acid Measure                                 |
| 2 Cream Test Bottles                      | 1 Test Bottle Brush                            |
| 1 Pipette Graduated for Milk and Cream    | 1 Lactometer                                   |
|   | 1 Set of Directions for testing Milk and Cream |



The case is made of finely finished hardwood, the dimensions being 10 in. x 10 in. x 10 in. Corners are reinforced by triangular strips of hardwood, making a very strong and durable box. The interior of the box is so arranged as to provide a separate compartment for each piece of apparatus, thus preventing breakage. The tester can be taken apart in a moment's time and securely packed into the case. The hinges, clasp and handle are neatly nickel plated. Weight of case and apparatus about 15 lbs. Price, with 2-bottle tester, \$9.00; with 4-bottle tester, \$10.00.

## Milk Test Supplies

### Scoville Milk Sampler



It takes the sample from the top to the bottom of the milk in the weigh can, thus giving a fair sample of the whole body of milk. When it reaches the bottom the movable cap closes, retaining the sample, which can then be discharged into the sample receptacle.

Price .....\$2.00

### Milk Thief

This is a very convenient sampler, and gives excellent satisfaction.

Price .....\$1.00

### The Ideal Sampler



For taking composite samples of milk and cream.

Price .....each, \$0.25

### The McKay Sampler

Made of brass tubing, nickel plated. Sampler is plunged to the bottom of can with the slot closed; a turn of the handle opens the slots and takes a sample from top to bottom. In ordering state whether wanted for milk or cream. Made in two lengths, 24 inch and 18 inch.

Price 24 inch with large slots.....\$3.50

Price 24 inch regular ..... 3.00

Price 18 inch ..... 2.50

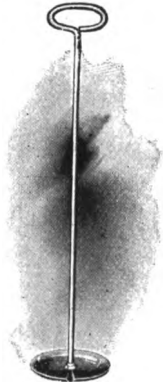
Plungers, each ..... .15

### Cream Stirrer and Sampler

Heavily tinned, each .....\$0.30

Per dozen ..... 3.50

Just the right length for 10-gallon can.



### Composite Test Gauge

The gauge is shown with a 1x5 inch test tube in position. By the use of this device a sample can be taken of each patron's cream proportioned to the weight. The scale is graduated on both edges. Made of brass; graduation marks and numbers are etched into the metal and cannot be scraped off.

Each .....\$0.50

Per dozen..... 5.00



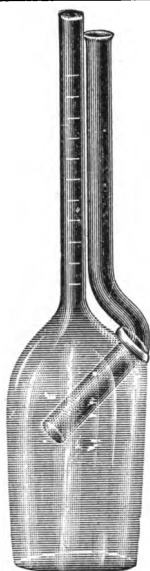
Mc Kay Sampler

We furnish special 1x5 inch test tubes of uniform diameter from top to bottom. These are the only kind that should be used. The common heavy test tube is unreliable for this purpose.

We also furnish special drivers' cases to fit 1x5 inch tubes in thirty and forty-five bottle sizes.



6 in. Milk.



Skim Milk.



Tip Top Pipette.

Automatic  
Pipette.

6 in. Cream.



9 in. Cream.



Butter Test Bottle with Funnel.



Plain Pipette.

# Babcock Test Bottles and Pipettes

Our Babcock glassware is carefully made, especial pains being taken to have all bottles of the same style uniform as to length and finish. We guarantee the accuracy of the calibration.

Glassware is always shipped by express unless specially ordered by mail, in which case mail shipments will be made at purchaser's risk.

## Milk Test Bottles

	Each.	Doz.
Graduated to 10% into 1/5 %	.....	.....
Graduated to 8% into 1/10%	.....	.....

## Skim Milk Test Bottles

For testing skim milk and butter-milk, graduated into 5/100%.

Each ..... Doz.....

This style of bottle has two separate necks; is less liable to breakage than bottles having extremely heavy necks and double bore.

## Cream Test Bottles

6 inches long, for 18 gram sample.

Graduated to 20% into 1/5%	.....
" " 25% " 1/5%	.....
" " 30% " 1/2%	.....
" " 35% " 1%	.....
" " 40% " 1/2%	.....
" " 40% " 1%	.....
" " 45% " 1/2%	.....
" " 45% " 1%	.....
" " 50% " 1/2%	.....
" " 50% " 1%	.....

6 inches long, for 9 gram sample.

Direct Reading.

Graduated to 30% into 1/2%	.....
" " 40% " 1/2%	.....
" " 50% " 1/2%	.....

9 inches long, for 18 gram sample.

Graduated to 30% into 1/5%	.....
" " 50% " 1/2%	.....
" " 55% " 1/2%	.....

## Butter Test Bottles

	Each	Doz.
Wright's Butter Test Bottle, 6 in. long with bulb neck, graduated to 94% into 1/5%.	.....	.....
Complete with butter funnel	.....	.....
Plain Butter Test Bottle, 9 in. long, graduated to 100% into 1%, not illustrated...	.....	.....

## Plain Pipettes

	Each.	Doz.
17.6 cc. ....	.....	.....
18 cc. ....	.....	.....
17.6 and 18 cc. combined....	.....	.....
9 cc. ....	.....	.....
8.8 cc. ....	.....	.....
6.04 cc. ....	.....	.....
5.9 cc. ....	.....	.....

## Tip Top Pipette

To operate, the mouth is applied to the slanting stem and milk drawn up until it overflows into the glass bulb surrounding the pipette proper, then press finger on the rubber cap and hold until pipette is to be emptied. When overflow bulb is full, take off cap and pour out the overflow.

Made in 17.6 cc. or 8 cc.

Price, either size.....\$1.00

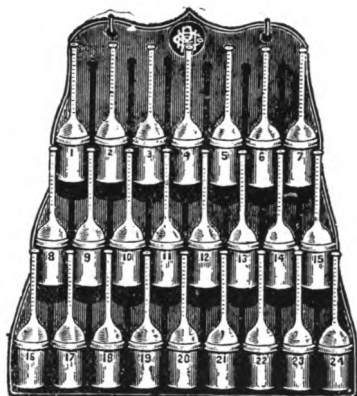
## Automatic Pipette

This pipette consists of two glass parts with a rubber stopper connection. To operate first squeeze the rubber bulb, then insert point of pipette in milk; release the bulb and the pipette fills, the overflow going into the large glass bulb. To empty overflow, remove stopper connection. With a little practice the overflow is very slight.

Price, 17.6 cc. capacity, each.....\$1.00

See Price Current or Write for Prices Not Given.

## Milk Test Supplies



### Babcock Test Bottle Rack

This rack is made of tin and hangs flat against the wall, but the bottles stand upright and are easily filled. The racks are made in all sizes, to suit the number of patrons at any factory.

#### Sizes and Prices

24-Bottle Rack.....	each, \$1.50
36 " " " " " " " "	" 1.75
42 " " " " " " " "	" 2.00
54 " " " " " " " "	" 2.25
64 " " " " " " " "	" 2.50

### The Ideal Babcock Bottle Tester

For testing the accuracy of the graduations on the neck of the bottles.

We have devised this tester for accurately and rapidly testing the graduations in the neck of the Babcock Milk Bottles, and it supersedes the unhandy and difficult mercury test heretofore so universally used.

This little instrument will test for two points without removing it from the bottle, and is always ready for use without auxilliary attachments, such as pipettes, mercury, corks, etc.

To make a test it is only necessary to fill the bottle with water (or milk, which is preferable) so that highest point of the liquid is even with the 0 mark.

Then slowly lower the tester into the bottle until the liquid rises half way between the two sections, and at that point should be the 5 per cent mark.

After that point is tested for and established, slowly lower the entire tester into the bottle so that the liquid rises over the top of the upper section about one-eighth of an inch, and if the bottle is correct the top of the liquid should be at the 10 per cent mark.

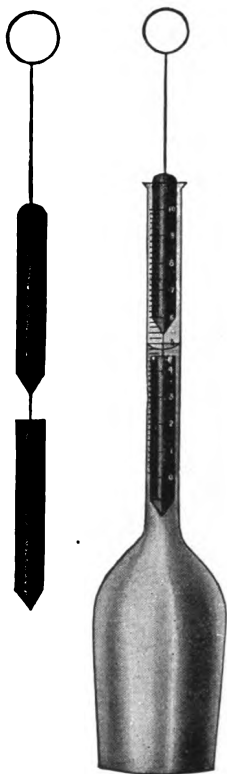
Endorsed by all creamery men who have seen and used it.

Price milk bottle.....	each, \$0.75
Price cream bottle, for 30 per cent bottles....	" 1.00
Price cream bottle, for 50 per cent bottles....	" 1.50

### Dividers

The reading of the test is facilitated very much by the use of the Dividers. It also eliminates the liability of error in reading the test.

Price.....per pair, \$0.40





## Milk Test Supplies

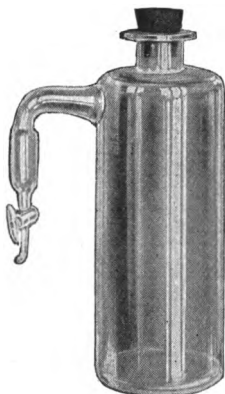


**Acid Measure**

17.5 cc.  
Each..... Doz.....

**Acid Dipper**

Shallow pattern, 17.5 or  
8.8 cc.  
Each..... Doz.....

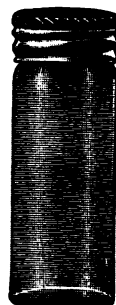


**Combined Acid Bottle  
and Measure**

Holds 2 quarts of acid.  
Price .....\$3.00

**Acid Funnel**

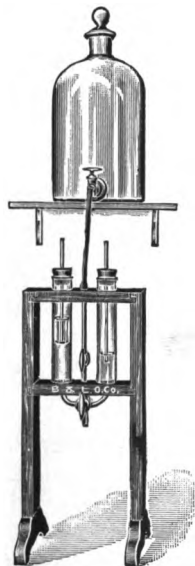
For filling acid into test  
bottles.  
Each..... Doz.....



**Screw Top Sample  
Bottle**

Size.	Per doz.
1 pint.....	.....
1/2 pint.....	.....
4 oz.....	.....
2 oz.....	.....
1/2 oz.....	.....

Prices on application.



**Rose Automatic Burette  
For Measuring Acid**

This device measures acid for testing and is very rapid. Once set to deliver a certain amount, it delivers the exact quantity every time. Adjustment can be quickly made. There is no overflow. Consists of two measuring tubes in which there are floats having mercury in the bottom which closes the end of the air vent tube when the rising acid brings it into contact, thus preventing the escape of air, whereupon the acid from reservoir bottle ceases flowing into measure. The tubes are used alternately, one filling while the other is being drawn directly into the test bottle. The device is furnished with stand, reservoir bottle and connections, but no shelf. A supply of mercury is included. It will measure as little as 8 cc., or as much as 20 cc., according to adjustment. For plants making many tests this device is practically necessary.

Price, complete.....\$10.00  
Price, without stand..... 7.50

**Wizard Red Reader  
For Reading Cream Tests**

This solution used in testing cream assures accurate readings of the results. A little "Reader" on top of the fat column just before reading the test makes the top line of fat sharp and distinct. The certainty that your cream tests are correctly read more than offsets the expense. One quart of "Reader" is sufficient for 800 to 1,000 samples.

Put up in packages as follows:

1-pt. bot., ea. \$0.40    1-qt. bot., ea. \$0.75    1/2-gal. jug, ea. \$1.25    1-gal. jug, ea. \$2.00

# Milk Test Supplies

## Acid

To get a reliable test, it is absolutely essential that the acid be of the proper strength. We get the best article procurable, direct from the manufacturer, and test before sending out. We **guarantee** it to be of the proper strength.

### Price in Single Gallon Lots

In jugs, per gallon.....\$.....

### In Carboys of 10 to 12 Gallons

Per lb.....\$.....

Carboys, extra.....

Carboys returned will be credited at billing price, less freight and carting, provided they are complete.

### Rocker-Lid Carboys.

Require no trunnion. Carboy returnable for credit. Hold 5 gallons each.

## Carboy Trunnion

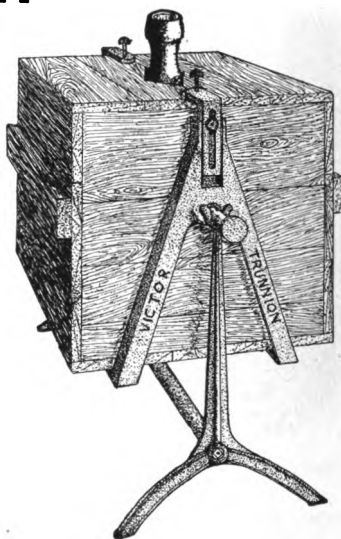
### The Victor

A trunnion for mounting sulfuric acid carboys is a great convenience.

By the use of a trunnion one man can pour out any quantity with perfect ease and safety, without risk of injury to clothes or person; thus doing the work of two men in the old awkward way of tipping the carboy over on the ground floor, and in one-tenth of the time.

The Victor Trunnion (illustrated herewith) differs from ordinary trunnions in being adjustable for carboy cases of varying dimensions. The range of adjustment is four inches, both in height and width.

Price of set complete .....\$4.50



Carboy of Acid Mounted on Victor Trunnion



## Rubber Carboy Cap

This cap will be found the only convenient way to close up the mouth of a carboy tightly; and this is very essential when Acid is contained in them, as it loses much of its strength by absorption of moisture from the atmosphere when exposed to the air. A tight-fitting cover prevents dirt or dust getting into the contents. Price .....\$1.00

## Rubber Carboy Splash Preventer

By putting this splash preventer over the mouth of a carboy, liquid contents flow out in a steady stream, without gulping or splashing out, as is usual in pouring directly from mouth of carboy. Price .....\$1.50

## Acid Pitcher

Our special acid pitcher is a great convenience. Holds one gallon. Price.\$ .75

## Hydrometer

For Testing Strength of Acid



Price .....each \$ .75

For Prices Not Given, See Price Current.

## Milk Test Supplies



### Burke's Pneumatic Acid Syphon

This convenient device consists of a pump arranged to produce air pressure in the acid carboy, causing the acid to flow through a lead tube into an acid pitcher or other receptacle. The acid flows smoothly and is under perfect control. A safety valve prevents bursting the carboy. Splashing is done away with.

The discharge tube is made of pure lead and is the only part of the device coming in contact with the acid. The head is made of special composition and is not affected by acid fumes.

Price, complete with pump.....\$5.50

### Utility Test Bottle Bath

To get accurate results in testing cream the temperature of the fat in the neck should be between 120 and 140 degrees F. when the reading is taken.

This is an inexpensive device to bring the fat to the proper temperature before reading.

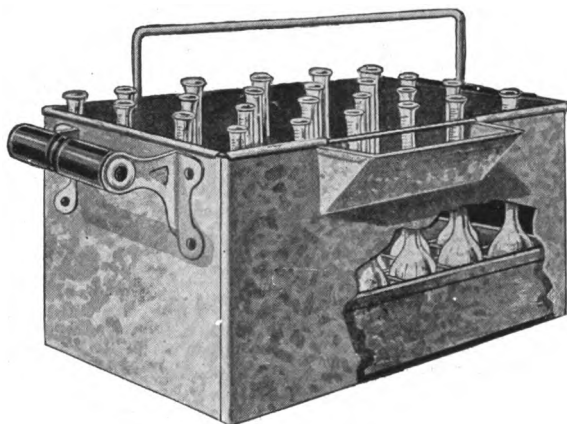
As illustrated it accommodates twenty-four (24) bottles. Each bottle sets in an individual cell in a removable tray. The tank can be set in any convenient place, and the bottles carried from the tester to the tank in the tray.

The tank is made of heavy galvanized steel, wire bound, and fitted with wood handles as shown.

In ordering specify whether for 6½ or 9-in. bottles.

Price each .....\$1.25

Special prices in quantities.



### Composite Test Preservatives

#### Corrosive Sublimate Tablets

##### Ideal

One of these tablets will keep eight or ten ounce samples sweet for two or four weeks, as desired. Made in two sizes. We recommend the larger size for general use.

No. 4. For four weeks' sample, in 1,000 lots.....\$3.00

No. 2. For two weeks' sample, in 1,000 lots..... 2.00

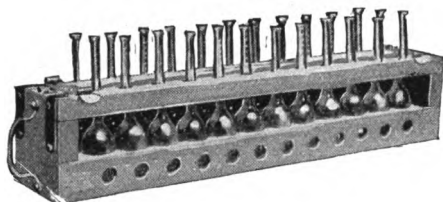
### Other Preservatives

Bichromate of Potash, powdered.....per lb. ....  
Farrington's Potassium Bichromate tablets.....per M. ....

# Milk Test Supplies

## Test Bottle Rack

Mattson's Patent



This rack is very convenient for handling bottles. It is designed to do away with handling bottles singly and answers for mixing rack, emptying rack, rinsing rack and bottle storage rack. During the whole process of testing, bottles are handled singly only when placing in the tester cups.

Each bottle rests in a separate pocket. A lock bar hinged at each end prevents the bottles from falling out when rack is turned upside down to drain. Holds cream bottles or milk bottles. Made of good sound pine boiled in oil to make it moisture proof. It will pay for itself in the saving in breakage.

24 and 32 bottle sizes. Either size.....each, \$2.85

## Waste Jar

We present herewith illustration of our Waste Jar, which will be found very convenient in connection with the testing operation. After reading the fat, bottles are placed neck down in the holes of the cover, which is fitted over the jar.

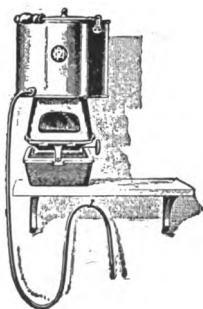
The jars are bound with a heavy galvanized steel band fitted with handles.



Price

Complete with cover and iron-bound five-gallon stone jar, as illustrated...\$2.50

## Combined "Babcock" Test Water Heater and Bottle Filler



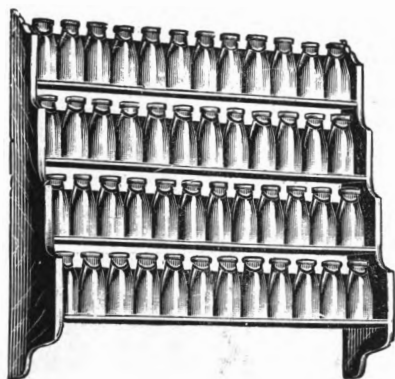
A combination that every one using a Babcock Tester needs. It is composed of the following parts:

COVERED KETTLE—Retinned, extra heavy, fitted with nipple for hose, size 8x6½ in., capacity 4 quarts .....	each \$1.00
LAMP STOVE—Cast Iron Oil Tank, hinge top, nickel front, 1 burner, height 8½ in., tank 3½x5½ in., complete, with wick.....	each .75
MOHR'S PINCHCOCK, nickel plated.....	" .25
PIPETTE TUBE, best glass with drawn point, length 2½ in. Price.....	each .10
PURE RUBBER HOSE, 3 ft. length by 3-16 inch diameter, per length.....	.50

Price of Complete Outfit

Including covered kettle, lamp stove, pinchcock, pipette tube and hose...\$2.50

## Milk Test Supplies



### Composite Test Sample Rack

This rack is very convenient for holding the lightning cover sample jars. The rack can be moved from weigh room to testing room without removing jars.

#### Price

For 24 ½-pint jars.....each,	\$1.50
" 24 1-pint " .....	1.75
" 24 1-quart " .....	2.00
" 48 ½-pint " .....	2.00
" 48 1-pint " .....	2.25
" 48 1-quart " .....	2.50



Tin Top.

### Sample Bottles for Composite Test

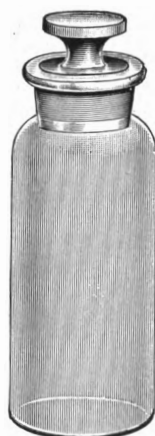
The tin top bottle is easily and quickly opened and being made very heavy from the best flint glass, will stand much hard usage.

The glass stoppered bottle is a favorite with many, as the stopper fits tight and prevents evaporation.

#### Prices

½-pint, per doz.....\$.....;	per gross, \$.....
1-pint, per doz.....;	per gross, .....
1-quart, per doz.....;	per gross, .....

See Price Current for Prices.



Glass Stoppered.

### Brass Tags

#### For Numbering Composite Test Jars

They are fastened about the neck of the bottle with annealed wire in such a way that they lay flat against the jar. Price .....each, \$ .02

#### Tags for Babcock Bottles

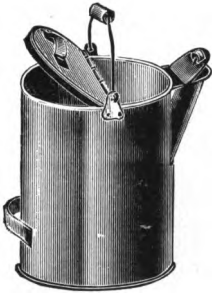


These are made from brass to bend around neck of bottle and numbered as desired.

Price .....per doz., \$ .12



## Equipment For Cream Gatherers



### Skimming Pails

These pails are made of XXX tin, with cover and spout. They are designed to be used for cream gathering, and are so made that one inch in depth makes a standard gauge of cream.

Price .....\$2.50

### Drivers' Pails

With supported bottom, each.....\$2.50

Without supported bottom..... 2.25



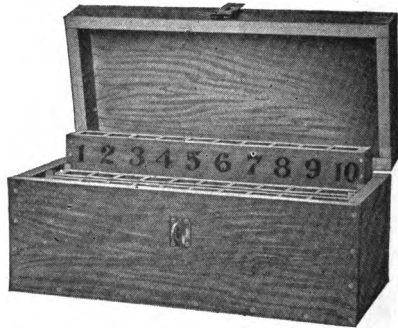
### Drivers' Sample Cases

The case illustrated is made of wood and is neat and strong. Can be locked with padlock if desired. Holds 30 or 45 five-inch test tubes, which are illustrated on page 307. We can also furnish galvanized cases.

#### Prices

For 30 5-inch tubes.....\$2.75

For 45 5-inch tubes..... 3.50



#### For 9 in. Test Tubes

30 bottle case, with wood cards...\$1.75; tin cards.....\$2.75

45 bottle case, with wood cards... 2.00; tin cards..... 3.50

Extra cards, wood, each..... .50; tin ..... 1.00

### Test Tubes—9 Inch



9-inch plain test tubes, with corks, per hundred.....\$6.00

9-inch lip test tubes, with corks, per hundred..... 6.00

### Corks for Test Tubes

Corks, for 9-inch test tube, per gross, \$0.40; extra quality, per gross.....\$0.75

Corks, for 1x5 test tubes..... .75

### Curtis Oil Test Churns

No. 1, holding 75 bottles.....\$45.00

No. 2, holding 105 bottles..... 55.00

No. 3, holding 210 bottles..... 80.00

### Rules for Reading Oil Tests

Wood, tenths .....each, \$0.15; per dozen.....\$1.50

Steel, tenths.....per dozen, 5.00

Burchard's .....each, .50

### Stationery for Cream Gathering Plants

**Driver's books**, stiff covers, per dozen.....\$0.90

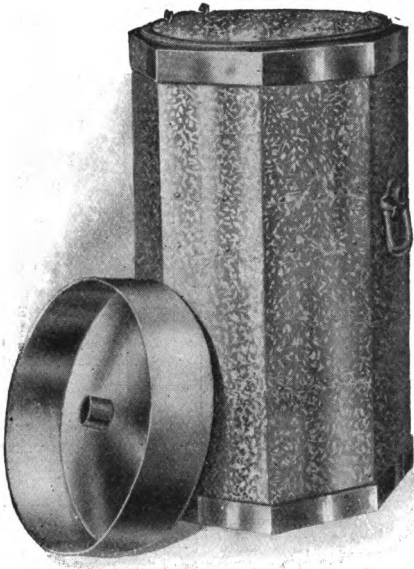
Paper covers, per dozen..... .85

**Patron's books**, common, per dozen..... .50

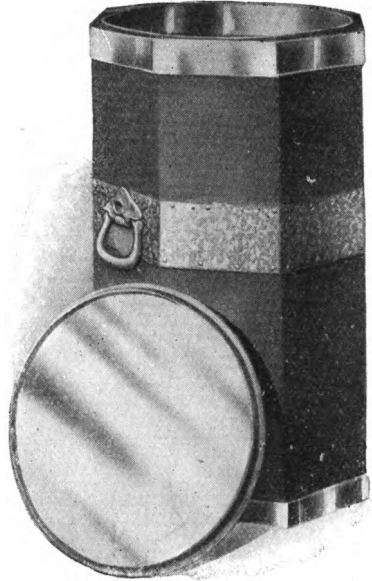
**Cream ledgers**, 100 pages, \$1.25; 200 pages, \$1.75; 300 pages..... 2.50

## Cream Carrying Cans

### Jacketed



Valerius Style, Showing Floating Cover.



Ideal Style, Showing Top Cover.

For transporting cream by wagon or by rail something better than the ordinary shipping can is needed for protection against changes of temperature. The "Valerius" and "Ideal" cans are the most substantial and satisfactory cans built. These cans are made of imported Welsh tin, surrounded by a wood jacket. Especial attention is given to the construction of this jacket, as it is the most important part of the can. It is made octagonal in shape, the joints in the wood being carefully fitted both inside and out. Each joint is covered on inside by a triangular strip of wood which strengthens it and effectually excludes the air; also acts as a support to the tin lining. The wood is painted inside with a mineral paint, which preserves it and helps to prevent shrinkage. The galvanized iron top is riveted to wood jacket, strengthening the can.

Two covers are provided, one of which goes inside the can and floats on the cream, preventing churning, and a supplementary cover on top of the can. The top cover has a close fitting iron joint and a thick wood lining which protects the contents of the can from extreme heat.

The "Ideal" can has a galvanized steel band around the middle to protect the wood casing from injury by handles of cans, which, with the heavy bands protecting top and bottom, makes it a very durable can.

The "Valerius" can is identical with the "Ideal" except that the wood jacket is entirely covered with galvanized steel. It will stand much rough usage and is especially recommended for railroad use.

#### Sizes and Prices

20	Gallon	Ideal.....	Each, \$ 8.50
30	"	Ideal.....	" 9.50
20	"	Valerius .....	" 10.00
30	"	Valerius .....	" 11.00

# Refrigerator Tank

For Gathering Cream



These are made to set in a common spring wagon, the cream being drawn from a  $1\frac{1}{4}$  inch outlet and conducted to the vat in the creamery by a pipe or tin conductor. The Tank is as easily cleaned as a common vat. This tank is made with airspaces in the walls and with double cover made tight with cork packing and clamped down. It maintains a uniform temperature in warm weather and prevents freezing in winter.

No expense has been spared to make this tank in the most substantial manner.

## Sizes and Prices

No.	Length	Width	Depth	Gallons	Price
0	38 inches	31 inches	31 inches	80	\$23.00
1	53 "	35 "	31 "	120	28.00
$1\frac{1}{2}$	" "	" "	" "	160	32.00
2	76 "	36 "	30 "	180	35.00
3	88 "	37 "	31 "	250	45.00

## Wagon Covers

White Canvas

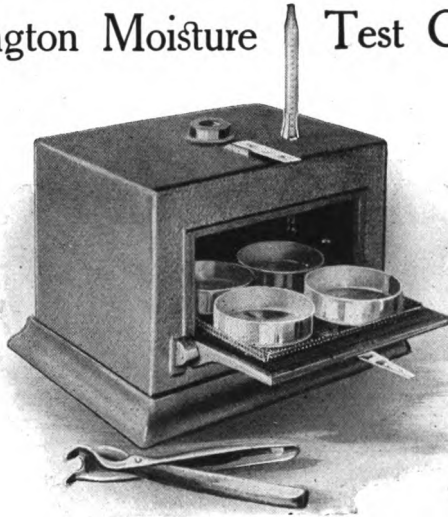
These covers are made of the best quality of goods of grade listed, and the preparation used thereon renders them perfectly waterproof. Guaranteed not to stick together from heat.

## Sizes and Prices

Size	8-oz. Duck Single Filling	10-oz. Duck Single Filling	12-oz. Duck Double Filling.	13-oz. Duck or No. 10	15-oz. Duck or No. 8	18-oz. Duck or No. 6	20-oz. Duck or No. 4
$5\frac{1}{2} \times 9$	.....	.....	.....	\$ 3.80	\$ 4.20	\$ 4.80	\$ 5.10
$5\frac{1}{2} \times 12$	.....	.....	.....	5.05	5.60	6.40	6.95
7 x 12	.....	.....	.....	6.45	7.15	8.15	8.70
7 x 15	\$2.90	\$ 3.65	.....	8.05	8.95	10.15	10.85
10 x 16	8.90	4.80	\$ 7.98	12.30	13.60	15.50	16.55
10 x 17	4.15	5.10	8.47	13.05	14.45	16.45	17.60
10 x 18	4.40	5.40	9.00	13.80	15.30	17.40	18.60
12 x 14	4.25	5.25	8.66	12.90	14.30	16.25	17.35
12 x 16	5.00	6.00	9.94	14.75	16.35	18.55	19.85
12 x 18	5.50	6.75	11.17	16.55	18.35	20.90	22.30
12 x 20	6.15	7.50	12.45	18.40	20.40	23.20	24.80
14 x 16	6.50	7.95	11.95	17.20	19.05	21.65	23.15
14 x 18	7.30	8.95	13.44	19.35	21.40	24.35	26.05
14 x 20	8.15	9.95	14.98	21.50	23.70	27.10	28.95
14 x 22	8.95	10.95	16.43	23.60	26.20	29.80	31.80
14 x 24	9.75	11.95	17.92	25.75	28.55	32.50	34.75
16 x 16	7.45	9.10	13.65	19.65	21.75	24.75	26.45
16 x 18	8.35	10.25	15.36	22.10	24.50	27.85	29.75



# Farrington Moisture Test Oven



Wisconsin  
High  
Pressure  
Principle

## New Model.

The Farrington Moisture Test Oven is a simple apparatus and is thoroughly reliable because it evaporates the moisture completely without danger of burning. It takes less actual time of the operator to make a moisture determination than any other. It requires no watching and will stand boiler pressure. The expense of operating is nothing, practically.

## Description of the Oven

Consists of an oven and a base; the oven is made in one piece and has heating surface on four sides. There are no joints inside the oven to leak.

Central steam inlet and outlet so as to give even distribution of heat.

Door drops down, forming a shelf when open so that sample dishes can be easily put in or taken out.

Sample dishes set in flanged perforated tray. Tray and all four pans can be removed at one time if desired.

Thermometer, furnished with test, inserted through top of oven and held by a spring clip.

Finished in porcelain enamel, inside and out, it is easily kept clean and makes a handsome addition to the creamery equipment.

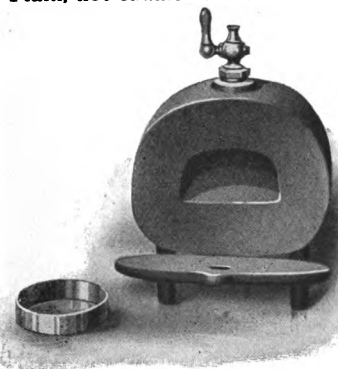
## Equipment Furnished

The Oven with Base,	One Tong,	One Tray,	Directions.
Four Sample Dishes,			
One Thermometer,			
	Prices		

Enameled in blue .....	\$15.00
Plain, not enameled .....	12.00

## The Farrington, Jr. Oven

Made of close grained cast iron, without packing, gaskets or joints. The steam jacket surrounds the evaporating chamber on all sides except a small door opening. Tests one sample at a time, requiring 15 to 20 minutes at ordinary steam pressures. Requires no attention. Oven is fully galvanized and



Oven Open.



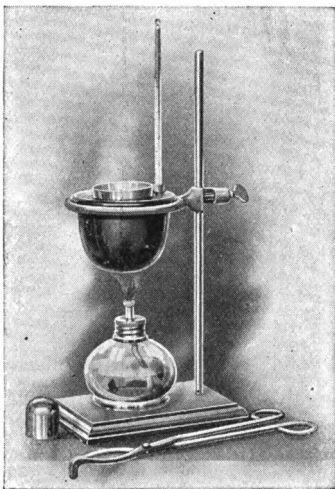
Oven Closed.

will stand up to 125 pounds pressure. One sample dish is included with each oven. Weight of oven about 25 lbs.

Price .....\$5.00

## Ames Moisture Test

In this test an alcohol lamp supplies the necessary heat. A bath of paraffine in the paraffine cup surrounds the sample cup and prevents the butter from being burned.



The apparatus consists of a jacketed paraffine container made of copper. The outside shell has a rounded bottom to expose as much surface as possible to the heat from the alcohol lamp. The inside shell is flaring, being larger in diameter at the top than at the bottom. An aluminum sample cup sets closely inside the receptacle, having contact all the way down so that the heat from the paraffine is transmitted without loss.

The apparatus is supported by a ring bracket adjustable to any desired height upon the vertical rod. Stand, rod and bracket are nickeled.

A special high-range thermometer, reading from 100 to 200 degrees centigrade is included. Also alcohol lamp, tongs for lifting the sample cup and full directions.

PRICE, COMPLETE APPARATUS, \$5.00.

### Price List of Parts

Base and Rod .....	\$0.50
Ring and Set Screw .....	.25
Jacketed Paraffine Cup .....	1.75
Sample Cup .....	.25
Tongs .....	.40
Thermometer .....	1.50
Lamp .....	.50

## C. P. Salt Test

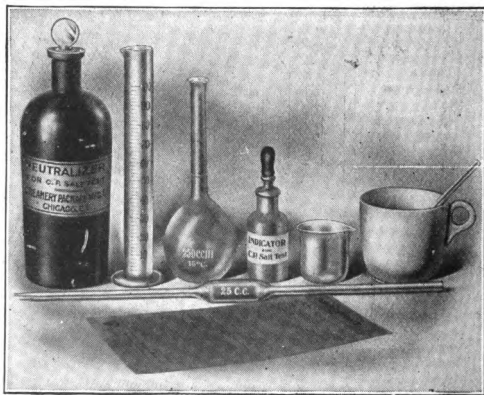
A simple, quick, accurate test for the per cent of salt in butter.

The scales and sample weight used with a moisture test will answer for the salt test as well. If desired the residue from the moisture test may be used for salt test, thus saving the time and trouble of weighing out another sample, and giving you a record of both salt and moisture from the same sample of butter. Complete directions included with outfit.

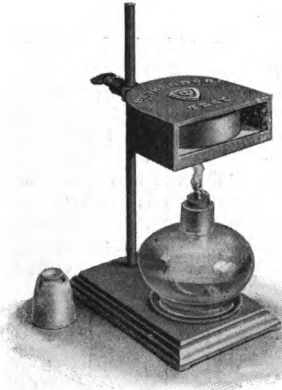
Price, complete, \$5.00

Price of Extras

Special Neutralizer Bottle.....	\$1.00
Graduated Cylinder .....	.95
Indicator Bottle with Dropper. .	.50
Flask .....	1.00
Beaker .....	.25
Cup .....	.10
Stirring Rod .....	.10
Pipette .....	.50
Indicator, 2 oz. bottle by mail, postpaid .....	.40
Neutralizer, per vial by mail, postpaid .....	.30
Neutralizer, per dozen vials...	3.00



## Benkendorf Moisture Test



The principle of this test is essentially the same as the oven test except that heat is applied direct to the evaporator by alcohol lamp or gas burner instead of steam jacket. The evaporator is a casting with space to receive the shallow sample dish. In the bottom is placed an asbestos mat which protects the butter from direct heat of the flame. The iron walls conduct the heat to all sides and the sample is heated equally from top and bottom, thus preventing sputtering and foaming. The sample being spread in a thin layer on the bottom of dish, the evaporation requires but a short time. For testing samples from the churn this test is

equally desirable. The buttermaker first lights the alcohol lamp and places it in position to heat the evaporator. Then takes the samples and weighs out 10 grams in the dish, puts it in the evaporator. It takes but 4 or 5 minutes to drive off all the moisture, which time may be employed in getting tubs or printer ready for use.

The apparatus is well made, handsomely finished, is practically unbreakable and is low in price.

Price, including evaporator, stand lamp, sample dish and lifting tongs....\$3.00

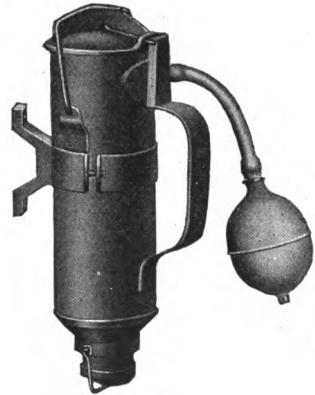
## Milk Sediment Tester

This is a new device for ascertaining the comparative cleanliness of milk and is very useful for creameries, cheese factories, bottling plants and milk inspectors. It removes all the dirt from a pint of milk and concentrates it on a cotton filter disc. A test can be made in a few seconds so that it can be used without loss of time when weighing in milk.

The milk is poured in, the air-tight cover clamped on with the wire bail, a few squeezes of the bulb forces the milk through the filter at the bottom and the test is complete. Remove the used cotton filter disc, put in a clean one, and put the dirty disc on a sheet of paper to dry.

Thus a record may be kept for comparison and the appearance of the discs is the best argument that can be made to get clean milk from your patrons.

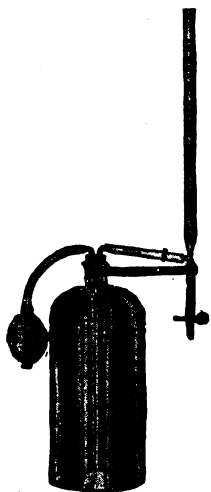
The apparatus fastens to the wall, requires but little space and is easily removed for cleaning.



Price, with 500 filter discs.....\$10.00  
Extra filter discs, per M..... 3.00

## Acidity Testing Apparatus

### The Automatic Acidimeter



One of the greatest of modern aids in butter and cheese making is the test by which the exact acidity of milk, cream or whey can be determined. All acidity tests are based upon the principal that acids and alkalies neutralize each other. Having an alkali solution of known strength the per cent of acidity in a sample can be quickly found. The best acidity test is the one which is most convenient to manipulate and offers the smallest chance of error. In the Automatic Acidimeter we offer an improved test which has the advantage of being self-contained; very rapid and gives the per cent of acidity direct from the reading.

**DIRECTIONS:**—Arrange the apparatus as shown in the cut, being careful to have the rubber stopper and all joints tight.

**To Fill the Burette:**—Squeeze rubber bulb, at the same time holding the pinch cock on feed tube open. The pressure in the bottle causes the neutralizer to rise in the burette. When filled to the zero mark at top of scale, release the pinch cock. A few trials will enable you to fill to the exact point easily.

**Sampling:**—After carefully mixing the milk, cream or whey to be tested, measure a 9 c. c. pipette full into a white cup. Rinse pipette with clean water and add rinsing to sample in cup.

**Making the Test:**—Add a couple of drops of Indicator to the sample. Add the Neutralizer a few drops at a time, giving the cup a circular motion to mix. At first the pink color caused by adding a few drops of neutralizer will quickly disappear, but as more of the acid becomes neutralized the color will disappear more slowly. As soon as a permanent pink color is obtained, acidity is neutralized and the test is complete, except

**Reading the Test:**—The full scale is 10 c. c., and represents 1% acid. Each c. c. is therefore equivalent to .1%. Example: If 2.5 c. c. of Neutralizer is used, the acidity is .25%; 5.9 c. c. is .59%, etc. Always start each test at zero to avoid mistakes in calculating the acidity.

Complete outfit includes  $\frac{1}{2}$  gallon bottle Neutralizer, burette and apparatus shown in illustration, 9 c. c. pipette and 2-ounce bottle of Indicator.

Price, complete .....\$4.00

### Mann's Acid Test

Price, complete .....\$3.50

#### Extras

Burette, with pinch cock...each	\$1.50	50 c. c. pipette .....	each	\$ .50
“ stand .....	.50	Beaker glass .....	“	.25
“ clamp .....	.50	Stirring rod .....	“	.10
Neutralizer, per gal. ....	1.00	Funnel .....	“	.25
Indicator, 2-oz. bottle by mail .....				.40

### Farrington's Alkaline Tablets

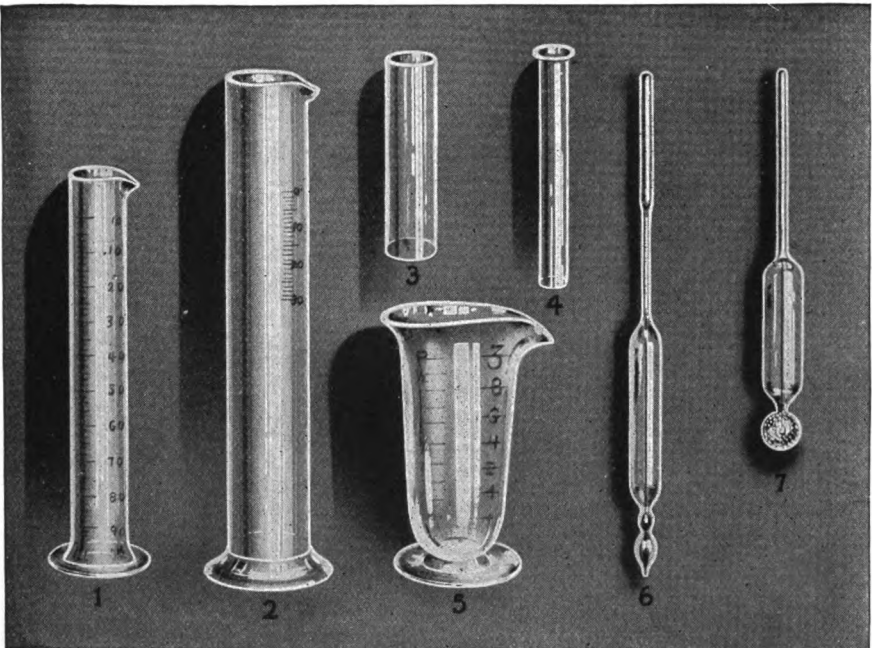
#### Prices

Small outfit complete, with 100 tablets, 20 c. c. vials and 17.6 c.c. pipette...\$ .85

Large outfit complete, with 1,000 tablets, 100 c. c. cylinder and 17.6 c. c. pipette .....

100 tablets .....	\$ .50	20 c. c. vial .....	each	.10
1,000 “ .....	2.00	100 c. c. cylinder .....	“	.95
17.6 c. c. pipette .....			“	.15

# Glassware



All glassware is shipped by express unless specifically ordered by mail. Mail shipments are at purchaser's risk.

**No. 1. Graduated Cylinder.**

This is graduated from 0 to 100 cc and is used for many purposes, such as making alkaline tablet solutions for testing acidity, measuring butter and cheese color, etc.

Price ..... Each, \$0.95

1½x10 cylinder with scale divided into 100 equal parts.

for set testing instruments..... Each, \$0.50

**No. 2. Test Jar.**

Used for testing the per cent of cream that will rise on milk. Graduated from 0 to 30. Two of these test jars, one 1½x10 cylinder and one common lactometer, make one set of testing instruments used for testing milk.

Price complete set, \$1.90. Test Jars..... Each, \$0.50

**No. 3. Heavy Test Tube.**

Size 1 in. by 5 in. Per dozen, 50c. Per 100..... \$4.00

Special 1x5 uniform diameter, heavy test tubes for composite test gauge. Per 100..... 4.50

**No. 4. Light Test Tube.**

Size ¾ in. by 6 in. Per dozen, 25c. Per 100..... 2.00

**No. 5. Glass Graduates.**

These can be furnished graduated either in fluid ounces or cubic centimeters.

1 dr.....	Each \$0.20	8 oz.....	Each \$0.45
2 oz.....	" .25	12 oz.....	" .60
4 oz.....	" .30	16 oz.....	" .75
5 cc. Each.....	\$0.28	60 cc. Each.....	\$0.25
10 cc. " .....	.30	250 cc. Each.....	\$0.45
15 cc. " .....	.22	375 cc. " .....	.60
30 cc. " .....	.24	500 cc. " .....	.75
		1000 cc. " .....	1.25
		200 cc. " .....	.35

**No. 6. Quevenne's Lactometer.**

Lactometer and thermometer combined. An accurately graduated instrument, which gives the specific gravity and temperature of milk at the same time.

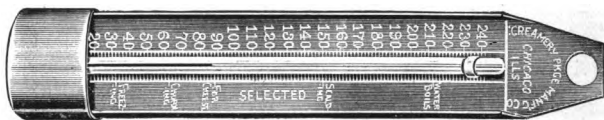
Price ..... Each \$2.00

**No. 7. Common Lactometer.**

Our common lactometers are imported and guaranteed to be correct.

Price ..... Each \$0.40

## Thermometers



- 8-inch Flange, Nickel Plated.....each 25c; per doz., \$2.75  
 10-inch Flange, Nickel Plated.....each 30c; per doz., 3.25  
 8-inch Flange, Oxidized, very accurate.....each 50c; per doz., 5.00



- Common Floating, 8-inch.....each 25c; per doz., \$1.75



- Bulb Floating, tested and guaranteed.....each 50c; per doz., \$5.50



- Churn Thermometer, 10-inch, for temperature below 100.....each 50c; per doz., \$5.50



- "Official" Thermometer. Guaranteed accurate to within one degree F.; easy reading hand written scale; range from 32 to 212; best thermometer for pasteurizing and general work; floats upright.....each 50c; per doz., \$5.00



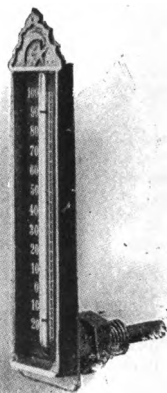
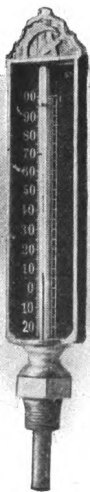
- Test Thermometer. Graduated from 32 to 212 Fahr., and is absolutely correct. Every creamery, cheese factory and milk plant should be provided with one to test ordinary thermometers; 12 inches long; each.....\$1.50

## Hot Water Thermometers

They are extremely sensitive, the end being set in a mercury bath surrounded by a thin metal sheath, are much less liable to breakage, as the sheathing protects the bulb. They are graduated from 40 to 240 degrees Fahr. and have a special magnifying tube. Made in two styles. Angle and Straight bulbs.

### Prices

- Angle, with 1½-inch bulb...\$2.50  
 Angle, with 3-inch bulb..... 3.00  
 Straight, with 1½-inch bulb. 2.50  
 Straight, with 3-inch bulb.. 3.00



# Temperature Controller

## Curtis Thermostat

The reliability of this device has been fully proven by actual practice and there are a large number of them in successful use. It will save practically the entire time of one man in a pasteurizing plant, besides holding the temperature more uniform than is possible by human

agency. A very slight change of temperature effects it.

The entire apparatus is shown in the accompanying cut. It consists of a double cylinder belt driven air pump, an air storage tank with pressure gauge, a restriction valve (A) thermostat, (B) which is inserted in the outlet of the pasteurizer, and diaphragm valve, (C) which controls the steam supply to pasteurizer, the several parts being connected by a pipe (D).

The action of the thermostat is due to the expansion and contraction of the metals in the stem. This is made of a brass tube within which is an iron rod. The brass expands about 50 per cent more than the iron does. By an arrangement of levers the lengthening and shortening of the rod operates a valve controlling the air outlet. When this valve is closed the air passing the restriction at the tank, having no escape, accumulates in the pipe, producing pressure on the diaphragm valve, closing it, and shutting off the steam. When the temperature falls the thermostatic valve opens, releasing the pressure on the diaphragm and permitting the steam valve to open.

The thermostat is provided with an adjustment, so that it can be set for warmer or cooler temperature as desired. Write for prices.

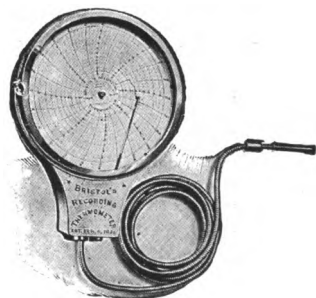
## Recording Thermometer

This device is invaluable in connection with a pasteurizing machine or in other dairy work where a record of temperature is wanted. It serves as a check upon the care exercised by employees to operate a pasteurizer or other machine according to directions. It makes a continuous record automatically of the temperature at the point where the sensitive bulb is located. The bulb, as shown at the right is connected to the Recording Instrument by a capillary tube 25 feet long protected with a flexible steel conduit. Any change of temperature at the bulb causes a corresponding movement of the pen which records the temperature upon the rotating dial. The charts are locked in the recorder preventing their being tampered with.

The apparatus is made with 8-inch dial and charts, and for 24 hour and 7 day revolutions. For pasteurizers we recommend the 24 hour chart. The No. 117 bulb in  $\frac{3}{8}$  inch diameter, 5 inches long and has  $\frac{1}{2}$  inch standard thread.

Price, complete with 25 feet connecting tube .....\$67.00

Extra tube 40c per foot.



## Dairy Authorities

Standard Books Relating to Dairying, Buttermaking, Cheesemaking, Ice Cream Making, and Kindred Lines.

Name of Book.	Author	Binding	Price
A. B. C. in Buttermaking.....	Monrad	Paper	\$0.50
A. B. C. in Cheesemaking.....	Monrad	Cloth	.50
Agricultural Bacteriology.....	Russel & Hastings	Cloth	1.25
Bacteria in Milk and Its Products.....	Conn	Cloth	1.25
Book of the Dairy.....	Fleishman	Cloth	4.00
Breeding Farm Animals.....	Marshall	Cloth	1.50
Canadian Dairying.....	Dean	Cloth	1.00
Care and Management of Steam Boilers.....	Roper	Cloth	2.00
Cheesemaking (Revised Edition).....	Decker	Cloth	1.75
Chemistry of Dairying.....	Snyder	Cloth	1.50
Clean Milk.....	Belcher	Cloth	1.00
Creamery Buttermaking (New Edition).....	Michels	Cloth	1.50
Creamery Patrons' Hand Book.....	Knight	Cloth	1.00
Dairy Farming.....	Michels	Cloth	1.00
Dairy Laboratory Guide.....	Melick	Cloth	1.25
Dairy Chemistry.....	Snyder	Cloth	1.25
Engineer's Hand Book.....	Roper	Cloth	3.50
Feeding of Farm Animals.....	Jordan	Cloth	1.25
Feeds and Feeding.....	Henry	Cloth	2.00
First Lessons in Dairying.....	Van Norman	Cloth	.50
Fancy Cheesemaking in America.....	Publow	Cloth	.50
Handbook for Farmers and Dairyemen.....	Woll	Cloth	1.50
Hygiene of Milk.....	Jensen & Pearson	Cloth	2.00
Ice Cream and Cakes (384 pages).....		Cloth	2.00
Ice Cream and Candy Makers' Guide.....		Paper	1.50
Market Dairying.....	Michels	Cloth	1.00
Milk and Its Products.....	Wing	Cloth	1.50
Milk, Its Production and Uses.....	Willoughby	Cloth	2.00
Milk, Its Nature and Composition.....	Aikman	Cloth	1.25
Modern Methods of Testing Milk.....	Van Slyke	Cloth	.75
Modern Buttermaking and Dairy Arithmetic.....	M. H. Meyer	Cloth	1.50
Outlines of Dairy Bacteriology.....	Russell	Cloth	1.00
Pasteurization and Milk Preservation.....	Monrad	Paper	.50
Poultry Packers' Guide.....	Bickel	Paper	2.00
Practical Dairy Bacteriology.....	Conn	Cloth	1.25
Principles and Practice of Buttermaking.....	McKay & Larsen	Cloth	1.50
Principles of Modern Dairy Practice.....	Grotenfelt and Woll	Cloth	2.00
Pure Milk and the Public Health.....	Ward	Cloth	2.00
Questions and Answers on Milk Testing.....	Publow and Troy	Cloth	.50
Questions and Answers on Buttermaking.....	Publow and Troy	Cloth	.50
Standard Recipes for Ice Cream Makers.....	Val Miller	Oil	Cloth 1.50
			Cloth 1.00
Testing Milk and Its Products.....	Farrington & Woll	Cloth	1.00
The Business of Dairying.....	Lane	Cloth	1.25
The Science and Practice of Cheesemaking.....	Van Slyke and Publow	Cloth	1.75
The Farm Dairy.....	Gurler	Cloth	1.00



# Simplex Creamery Computator

CREAM TESTING 27 1/2 PER CENT										CREAM TESTING 27 PER CENT									
—OR—										—OR—									
PRICE AT 27 1/2 CENTS										PRICE AT 27 CENTS									
1	275	26	7 15	51	14 025	76	20 90	1	27	26	7 02	51	13 77	76	20 82	1	27	26	7 02
2	55	27	7 425	52	14 30	77	21 175	2	54	27	7 29	52	14 04	77	20 79	2	54	27	7 29
3	825	28	7 70	53	14 575	78	21 45	3	81	28	7 56	53	14 31	78	21 06	3	81	28	7 56
4	1 10	29	7 975	54	14 85	79	21 725	4	1 08	29	7 83	54	14 58	79	21 33	4	1 08	29	7 83
5	1 375	30	8 25	55	15 125	80	22 00	5	1 35	30	8 10	55	14 85	80	21 60	5	1 35	30	8 10
6	1 65	31	8 525	56	15 40	81	22 275	6	1 62	31	8 37	56	15 12	81	21 87	6	1 62	31	8 37
7	1 925	32	8 80	57	15 675	82	22 55	7	1 89	32	8 64	57	15 39	82	22 14	7	1 89	32	8 64
8	2 20	33	9 075	58	15 95	83	22 825	8	2 16	33	8 91	58	15 66	83	22 41	8	2 16	33	8 91
9	2 475	34	9 35	59	16 225	84	23 10	9	2 43	34	9 18	59	15 93	84	22 68	9	2 43	34	9 18
10	2 75	35	9 625	60	16 50	85	23 375	10	2 70	35	9 45	60	16 20	85	22 95	10	2 70	35	9 45
11	3 025	36	9 90	61	16 775	86	23 65	11	2 97	36	9 72	61	16 47	86	23 22	11	2 97	36	9 72
12	3 30	37	10 175	62	17 05	87	23 925	12	3 24	37	9 99	62	16 74	87	23 49	12	3 24	37	9 99
13	3 575	38	10 45	63	17 325	88	24 20	13	3 51	38	10 26	63	17 01	88	23 76	13	3 51	38	10 26
14	3 85	39	10 725	64	17 60	89	24 475	14	3 78	39	10 53	64	17 28	89	24 03	14	3 78	39	10 53
15	4 125	40	11 00	65	17 875	90	24 75	15	4 05	40	10 80	65	17 55	90	24 30	15	4 05	40	10 80
16	4 40	41	11 275	66	18 15	91	25 025	16	4 32	41	11 07	66	17 82	91	24 57	16	4 32	41	11 07
17	4 675	42	11 55	67	18 425	92	25 30	17	4 59	42	11 34	67	18 09	92	24 84	17	4 59	42	11 34
18	4 95	43	11 825	68	18 70	93	25 575	18	4 86	43	11 61	68	18 36	93	25 11	18	4 86	43	11 61
19	5 225	44	12 10	69	18 975	94	25 85	19	5 13	44	11 88	69	18 63	94	25 38	19	5 13	44	11 88
20	5 50	45	12 375	70	19 25	95	26 125	20	5 40	45	12 15	70	18 90	95	25 65	20	5 40	45	12 15
21	5 775	46	12 65	71	19 525	96	26 40	21	5 67	46	12 42	71	19 17	96	25 92	21	5 67	46	12 42
22	6 05	47	12 925	72	19 80	97	26 675	22	5 94	47	12 69	72	19 44	97	26 19	22	5 94	47	12 69
23	6 325	48	13 20	73	20 075	98	26 95	23	6 21	48	12 96	73	19 71	98	26 46	23	6 21	48	12 96
24	6 60	49	13 475	74	20 35	99	27 225	24	6 48	49	13 23	74	19 98	99	26 73	24	6 48	49	13 23
25	6 875	50	13 75	75	20 625	100	27 50	25	6 75	50	13 50	75	20 25	100	27 00	25	6 75	50	13 50

TENTHS				TENTHS			
1	.03	5	14	1	.03	5	13
2	.05	6	16	2	.05	6	16
3	.08	7	19	3	.08	7	19
4	.11	8	22	4	.11	8	22
5	.14	9	25	5	.14	9	24

## SIMPLEX CREAMERY COMPUTATOR

The Simplex is a 120-page book, 8x5 inches in size, bound in flexible leather—a most convenient size. It gives the butter fat in from one to one hundred pounds of cream testing from ten to fifty per cent by half per cents. The same tables serve to give the value of from one to one hundred pounds of butter fat at from ten to fifty cents a pound. There are also tables for whole milk testing 2.9 to 5.9 per cent. Thus every computation necessary to figure the value of butter fat in milk or cream is provided.

The figures are large and not crowded on the page; printed on good bond paper. Leather index tabs on each leaf enable one to find the desired page instantly.

Price..... \$3.50

## Eby's Handy Tables

This book is widely used for computing value of milk and cream. Leather Binding. Price.....\$2.50



		Prices	
New Style .....	each,	\$ .75;	per dozen.....\$8.00
Old Style .....	each,	.75;	per dozen..... 8.00

[illegible]

Prices			
50 patron.....each,	\$1.25	150 patron.....each,	\$2.00
100 patron.....“	1.75	200 patron.....“	2.25
250 patron.....each,	\$2.50		

		Prices	
20 patron.....each,	\$ .40	60 patron.....each,	\$ .70
30 patron.....“	.50	80 patron.....“	.80
40 patron.....“	.60	100 patron.....“	.90

[illegible]

Price, per dozen..... \$ .25

## Stationery

### New Gathered Cream Ledger

[illegible]

The above cut shows ruling of the column of the new gathered cream ledger. Two columns to the page, 42 lines to the column. Space at top of page for patron's name, address and number. Gives a complete record of each delivery from each patron. Bound in board with leather back. Size of page, 16x11 inches. Made in two sizes.

1	21	41	61	81
2	22	42	62	82
3	23	43	63	83
4	24	44	64	84
5	25	45	65	85
6	26	46	66	86
7	27	47	67	87
8	28	48	68	88
9	29	49	69	89
10	30	50	70	90
11	31	51	71	91
12	32	52	72	92
13	33	53	73	93
14	34	54	74	94
15	35	55	75	95
16	36	56	76	96
17	37	57	77	97
18	38	58	78	98
19	39	59	79	99
20	40	60	80	100

**200 page, each.....\$2.00**

**300 page, each.....\$3.00**

## Test Blanks

For keeping tally of tests as made. Ruled and numbered for 100 patrons. Size of blank 4x6 inches. Very convenient, reduces liability of error in recording tests. Put up in pads of 100 each.

Price, per thousand.....\$1.50

# American Shipping Book

[illegible]

A shipping book and ready record of current transactions for the use of creamery men and shippers of butter, eggs, cheese and dressed poultry. The illustration shows book open. Contains columns for date, name and address of consignee, number of packages, description, net and gross weight, railroad or express company, cost, amount of draft, date of returns, amount of returns, prices received, amount received less freight and commission, profit and loss, remarks. It is, in short, a complete record of each shipment made from the factory. Contains 100 pages; two pages hold complete record of fifteen shipments. Strongly bound, leather corners and backs.

Price, each.....\$1.25

## Vye Creamery Accounting System

A revised Vye's system, fully up to date, providing for whole milk, cream or combined manner of operation.

Each book is complete in itself and may be used for the purpose indicated without adopting the entire system.

A brief description of the books used follows. Each is substantially bound in half Russia and presents a very pleasing appearance.

### Butter Maker's Daily Record

This is designed to give on an open page the detailed information the butter-maker should record in order to understand the results of his operations. One folio page gives the results for a month. The book will last five years.

Price, each.....\$2.50

### Milk Receipt Pay Roll

A large book designed to contain on a folio page, where the creamery is run on the whole milk basis, the milk delivered by each patron daily and monthly, together with test, fat, price, purchases, and net pay roll. It also provides for the daily and monthly receipts of milk, as well as the monthly fat receipts and general facts of the month's operation.

Price, each.....\$3.25

### Cream Receipt Book

For recording the cream received from each patron, the test and the fat. It provides for the total cream receipts and fat—facts which every up-to-date butter maker must know to understand his daily operations.

Price, each.....\$2.50

### Patron's Sales Book

A very convenient arrangement for recording the butter sales to patrons. The one to whom the butter is delivered signs for it in this book, thus providing a permanent record.

Price, each.....\$1.60

### Shipping Book

A book of permanent record providing for a record of every shipment, its weight, shrinkage, price, commission, freight and drayage, and net proceeds.

Price, each.....\$1.25

### Cash Book

A form of providing the usual facts concerning cash besides a distinct record of cash due and paid to patrons, the amount in the sinking fund, and expense account. Its use gives daily the facts concerning these very important accounts.

Price, each.....\$2.50

## American System of Creamery Accounting

Covers the business done by the average butter factory. Some of the records are not needed in a co-operative creamery, and some are not necessary in others, but every creameryman will find some part of this system of value to him. The blanks are put up in pads, for convenience. A circular showing the several forms will be sent on application.

**Butter Makers' Daily Record Sheet**, in pads of 25, price, per pad.....\$0.50

    Gives all the essential facts about the manufacturing.

**Daily Test Sheet**, in pads of 25, price, per pad..... .50

    Each sheet has room for 186 tests.

**Haulers' or Station Check Sheet**, in pads of 25, price, per pad..... .50

    A complete daily check of butter fat receipts from haulers or stations.

**Daily Churn Record**, in pads of 25, price, per pad..... .50

**Daily Pay Roll**, in pads of 25, price, per pad..... .50

    Invaluable where cream is paid for daily.

**Patrons' Daily Record**, in book form, price..... 2.50

    For recording daily milk or cream receipts from patrons, also test and pounds of fat.



# Milk Dealers' Stationery

## Route Books

Address		ROUTE No. 25 FOR MONTHS OF												AND 26												190												Amount	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31							
Dr.																																							
Cr.																																							
Milk Del'd																																							
Tickets Rec'd																																							
Cream Del'd																																							
Tickets Rec'd																																							
Bottles Del'd																																							
Bottles Rec'd																																							

### The Acme

New Acme style. Binders' cloth covered. Giving amount of tickets sold, cash received, milk and cream coupons received, full and empty bottles delivered and returned. Room for four names to a page; 40 leaves.

#### Price

Each .....\$0.35 Per dozen..... 3.50  
Mail, extra, 5 cents each.

Credit bills at once when paid.		Refer to book												when collecting.												Keep accounts correctly.													
NAME	Bal. Due	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Amount	Notes					
Milk Co.																																							
A. M.																																							
C. M.																																							
...																																							
A. M.																																							
C. M.																																							
...																																							
A. M.																																							
C. M.																																							
...																																							
A. M.																																							
C. M.																																							
...																																							

### The Perfect

Each book contains 120 leaves, each leaf answering for two customers for one month. The above illustration shows ruling of two pages. The book is well bound in cloth. A special feature of this book is the summary blank in back of book.

#### Price

Each .....\$0.50 Per dozen..... 5.00  
Mail, extra, 5 cents each.

### The Ideal

From the illustration a partial idea can be gained of the practicality of our "Ideal Route Book." There is ample room for the customer's name opposite the credit column, and address opposite the debit column. There are three ways in which the book can be used to advantage: First, running 12 names to a leaf for one month. Second, running 6 names to a leaf for two months. Third, running 1 name to a leaf for twelve months. Each leaf represents a full month with space for "balance due" from each preceding leaf, and "amount due" at end of each month.

The books are well printed and bound. Brown binders' cloth, stiff.

#### Price

20 leaves. Each.....\$0.15; per dozen.....\$1.50  
30 leaves. Each......20; per dozen..... 2.25  
40 leaves. Each......25; per dozen..... 2.75  
60 leaves. Each......30; per dozen..... 3.25

Route No. 5		for Months of Jan and Feb												Amount																			
NAME	Bal. Due	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Amount
Joe Jones	1.50																																3.50
John A.	1.50																																3.50
12nd month	2.50																																5.50





# Milk Dealers' Stationery

32		Name..... Mrs. E. Martin																														
		Address..... 44 North Ave.																														
No.	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Jan 1																															
2	Jan 2																															
3	Jan 3																															
4	Jan 4																															
5	Jan 5																															
6	Jan 6																															
7	Jan 7																															
8	Jan 8																															
9	Jan 9																															
10	Jan 10																															
11	Jan 11																															
12	Jan 12																															
13	Jan 13																															
14	Jan 14																															
15	Jan 15																															
16	Jan 16																															
17	Jan 17																															
18	Jan 18																															
19	Jan 19																															
20	Jan 20																															
21	Jan 21																															
22	Jan 22																															
23	Jan 23																															
24	Jan 24																															
25	Jan 25																															
26	Jan 26																															
27	Jan 27																															
28	Jan 28																															
29	Jan 29																															
30	Jan 30																															
31	Jan 31																															
TICKETS		3 50																														
MISC		64																														
TOTAL		4 14																														
Ct		1 50																														
Bal.		2 82																														

## Milk Dealers' Ledgers

**THE PERFECT**—This Ledger is complete, and very easy to understand. Size of cover 12¼ inches long by 9 inches wide. Has extra board covers with imitation leather covering, and corners reinforced with real leather, printed on the best glazed paper, and well ruled.

Has 200 pages, representing 200 yearly accounts. Furnished with separate index only.

### Price

Complete with index, each.....\$2.50      Extra indexes.....\$0.50

156		Name..... Mrs. J. Smith																														
		Address..... 47 Main St.																														
No.	Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Jan 1																															
2	Jan 2																															
3	Jan 3																															
4	Jan 4																															
5	Jan 5																															
6	Jan 6																															
7	Jan 7																															
8	Jan 8																															
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10	Jan 10																															
11	Jan 11																															
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16	Jan 16																															
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19	Jan 19																															
20	Jan 20																															
21	Jan 21																															
22	Jan 22																															
23	Jan 23																															
24	Jan 24																															
25	Jan 25																															
26	Jan 26																															
27	Jan 27																															
28	Jan 28																															
29	Jan 29																															
30	Jan 30																															
31	Jan 31																															
TICKETS		3 50																														
MISC		64																														
TOTAL		4 14																														
Ct		1 50																														
Bal.		2 82																														

**THE IDEAL**—This is the original style of milk ledger, the book being somewhat larger, and ruling a trifle different from the Perfect. The size of cover is 17 inches long by 11 inches wide. Has stiff board cover, covered on the outside with imitation leather. Made with best glazed paper. Perfectly ruled. Has 240 pages, with two accounts on each page, making a total of 480 yearly accounts. Furnished in two styles, with separate book or marginal index.

### Price

Complete with separate book index, each.....\$2.75  
Extra book indexes, each......40  
With marginal index, each..... 2.75

## Tally Sheets

### Used in Connection With Route Books

Very convenient where one of our Route Books is used. Each month the driver leaves one of these sheets with each customer. Each day the customer marks in the proper column the quantity of sweet milk, cream, buttermilk, etc., wanted for that day. The driver leaves the amount indicated and makes the proper charge in his route book. In this way all errors and disputes are avoided. We can change the arrangement at the head of the columns as desired. Printed on Tag Board.

<b>MADSEN DAIRY CO.</b>									
301 HIRSCH ST									
To Mr. _____									
Milk delivered during month _____ 190__									
BALANCE DUE, \$									
DATE	SWEET MILK	CREAM	BUTTER	BUTTER	BUTTER	BUTTER	BUTTER	BUTTER	BUTTER
1	/	/	/	/	/	/	/	/	/
2	2	/	/	/	/	/	/	/	/
3	/	2	/	/	/	/	/	/	/
4	/	/	/	/	/	/	/	/	/
5	/	/	/	/	/	/	/	/	/

### Price

1,000 lots, per 1,000.....\$2.25  
3,000 lots, per 1,000..... 2.00  
5,000 lots, per 1,000..... 1.80  
10,000 lots and over, per 1,000..... 1.60

## Advertising Signs



**Square.**—Size 12x21 inches, with or without molding. Three styles of wording, viz.: (1) Pure Milk and Cream for Sale Here. (2) Milk Depot. (3) Milk and Cream. Wording on both sides.

With Wooden Strap.....each, \$1.25  
With Rods and Hooks, to swing.....each, 1.75

**Can Shaped.**—One style of wording only, as shown. Same on both sides.

With Strap for fastening.....each, \$2.00  
With Rods and Hooks, to swing.....each, 2.50

**Bottle Shaped.**—One style of wording only. Same on both sides.

With Strap, for fastening.....each, \$2.00  
With Rod and Hooks, to swing.....each, 2.50

## Cardboard Signs



Size, 7x14 inches; printed with blue ink on extra grade white cardboard. Have string to hang by. In ordering, state wording wanted.

Any style.....each, \$0.03

Per dozen.....\$0.25

## Gilt Buttermilk Signs

For saloons and restaurants. Made of heavy cardboard, top and bottom bound with enameled tin. Gilt letters raised above dark background. One style of wording only, as shown, and on one side of sign.

Each.....\$0.10

Per doz.....\$1.00

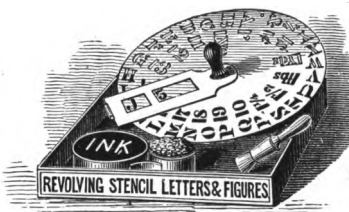


# Stencils

## Revolving Letters and Figures

### Alphabet and Figures, Combined

¼-inch	.....	\$1.25
⅜ " "	.....	1.25
½ " "	.....	1.25
¾ " "	.....	1.50
⅝ " "	.....	1.50
⅞ " "	.....	1.75
1 " "	.....	2.00
1¼ " "	.....	2.50
1½ " no figures	.....	2.00



### Figures Only

¼-inch	.....	\$0.60
⅜ " "	.....	.60
½ " "	.....	.70
¾ " "	.....	.70
⅝ " "	.....	.80
⅞ " "	.....	.80
1 " "	.....	.80
1¼ " "	.....	1.00
1½ " "	.....	1.25

## Months and Dates

Same pattern as revolving stencil letters and figures.

Price	.....	\$1.75
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## Eureka Adjustable Stencils

### Letters

Alphabets of 33 pieces, in boxes, as follows: 26 letters of the alphabet, 1 &, 1 beginner, 1 ender, 1 period, 1 apostrophe, 1 comma and 1 blank.

½-inch	.....	\$0.65
¾ " "	.....	.70
1 " "	.....	.80
1½ " "	.....	1.00
2 " "	.....	1.40
2½ " "	.....	2.00

### Figures

Figures, in sets, as follows: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0; 1 dollar mark, 1 cent mark, 1 figure period, 1 beginner, 1 ender.

½-inch	.....	\$0.25
¾ " "	.....	.30
1 " "	.....	.35
1½ " "	.....	.45
2 " "	.....	.65
2½ " "	.....	.95

## Special Stencils

### Brass

We make a specialty of getting out stencils of all kinds, and cut any design desired. Write for prices.



### Paste

	Each.	Doz.
Stencil, small case, black	.....\$0.20	\$2.00
" large black	......35	3.50
" small blue	......30	3.00
" large blue	......50	5.00
" small red	......40	4.00
" large red	......65	6.50

For Stencil Brushes see under Brushes.

## Paint Pencils

The Acme Pencil will be found very useful for marking boxes, etc. It is economical and convenient.

Price, each	.....\$0.05	Per dozen	.....\$0.50
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## Lumber Crayons

For marking weights, each	.....\$0.10	Per dozen	.....\$1.00
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# Platform Scales

## "Fairbanks"

### With Single Beam and Wheels

Capacity, lbs., 400.	Platform, 16x22	Price....\$26.00
" " 600.	" 16x25.	" .... 33.00
Same, without wheels, \$3.00 less.		

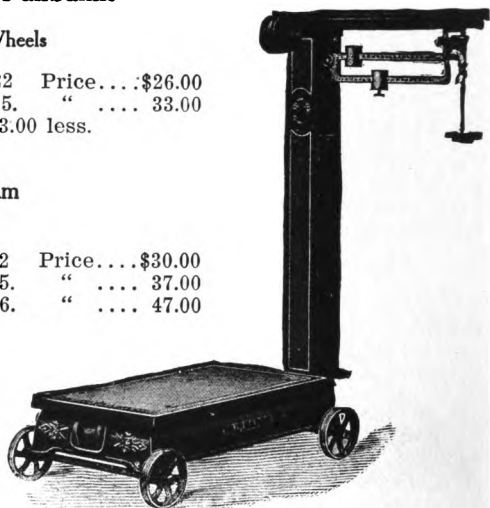
### With Double Beam

#### With Wheels

Capacity, lbs., 400.	Platform, 16x22	Price....\$30.00
" " 600.	" 16x25.	" .... 37.00
" " 1000.	" 17x26.	" .... 47.00

#### Without Wheels

Capacity.	Platform.	Price.
400.....	16x22 .....	\$27.00
600.....	16x25 .....	34.00
1000.....	17x26 .....	43.00



### Five Beam Scale

#### Without Wheels

Capacity .....	lbs., 600
Platform .....	16x25
Price .....	\$47.00

#### With Wheels

Capacity .....	lbs., 600
Platform .....	16x25
Price .....	\$50.00

### Seven Beam Scale

#### Without Wheels

Capacity .....	lbs., 1,000
Platform .....	17x26
Price .....	\$56.00

#### With Wheels

Capacity .....	lbs., 1,000
Platform .....	17x26
Price .	\$60.00



### Large Platform Scales

#### With Seven-Bar Full Capacity Beams

Capacity, lbs.	Platform, inches	Capacity, lbs.	Platform, inches
1800x1	44x35 without wheels..\$107.00	1800x1	44x35 with wheels..\$114.00

# Platform Scales

## Osgood

### Single Beam Without Wheels

Capacity	Platform	Price
400 .....	15x21.....	\$23.00
600 .....	16x25.....	30.00

### With Wheels

Capacity	Platform	Price
400 .....	15x21.....	\$26.00
600 .....	16x25.....	33.00

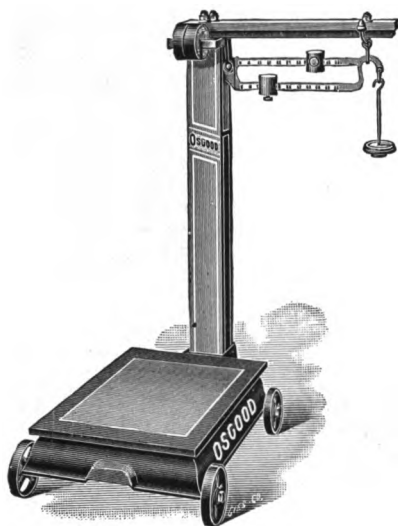
### Double Beam

#### Without Wheels

Capacity	Platform	Price
400 .....	15x21.....	\$27.00
600 .....	16x25.....	34.00
1000 .....	17x26.....	38.00

#### With Wheels

Capacity	Platform	Price
400 .....	15x21.....	\$30.00
600 .....	16x25.....	37.00
1000 .....	17x26.....	42.00



## Cheese Factory Scales

### Without Wheels

	Capacity	Platform	Price
Five beams .....	600 .....	16x25.....	\$47.00
Seven beams .....	1000.....	17x26.....	56.00

### With Wheels

Five beams .....	600 .....	16x25.....	\$50.00
Seven beams .....	1000.....	17x26.....	60.00

## Gaston

### Single Beam

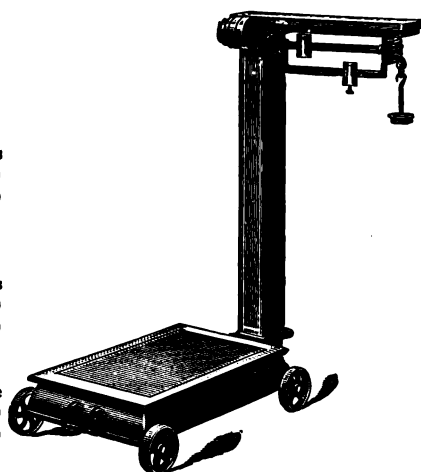
Capacity Lbs.	Platform Inches	Without Wheels	With Wheels
400 .....	15x21.....	\$23.00	\$26.00
600 .....	16x25.....	30.00	33.00

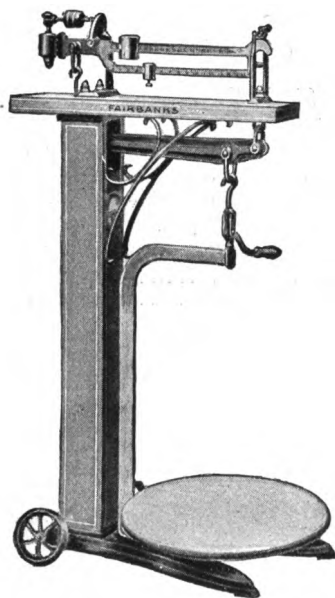
### Double Beam

Capacity Lbs.	Platform Inches	Without Wheels	With Wheels
400 .....	15x21.....	\$27.00	\$30.00
600 .....	16x25.....	34.00	37.00

### Five Beams

Capacity	Price
600.....Without Wheels.....	\$47.00
600.....With Wheels.....	50.00





## Suspension Butter Scales

### Portable Pattern

Designed for weighing tubs of butter, and cheeses. All the pivots, bearings, and essential working parts of the Scale are at some distance above the platform, and thus entirely out of the way of salt and moisture necessarily present. The platform is fitted with convenient relieving device, putting the strain on the Scale only during the act of weighing. The Scale has double beam with upper bar graduated 100x $\frac{1}{2}$  lbs., lower bar 15 lbs. x 1 oz. The platform is 20 inches in diameter.

### Prices

115-lb., without wheels.....	\$26.00
115-lb., with wheels.....	30.00
215-lb., without wheels.....	28.00
215-lb., with wheels.....	32.00

## Folding Creamery Scales

Capacity—110 pounds on lower beam; 110 ounces on upper beam.

This scale when not in use can be folded perfectly flat against the wall entirely out of the way.

When hung for use the platform sets upon the floor, the load is put on, and then by throwing up the cam at the lower end of base plate, the whole scale with load is raised free from the floor, the weight taken, then by turning the cam down the load is placed solid upon the floor again.

For salting butter this scale has no equal. The lower brass beam is graduated in pounds, and the upper brass beam is graduated in ounces. There is a counterbalance on back of beam to balance the tub. Place the tub upon the scale and weigh the unsalted butter. Then slide the ounce poise out even with the lower poise and add on salt until the scale balances. This scale does its own figuring, as the ounces need not be computed.

The platform and hangers are galvanized so as not to be injured by coming into contact with salt.

The scale is entirely out of the way when not in use.

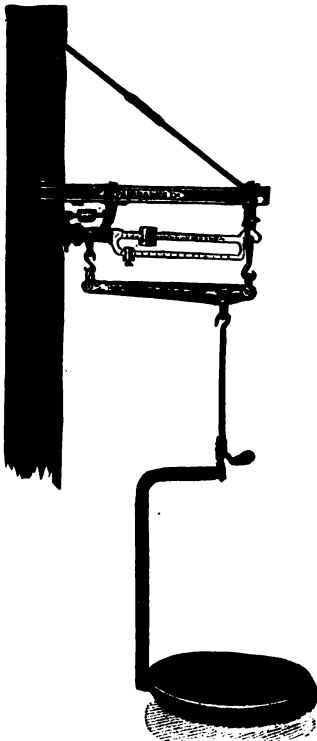
### Prices

2 oz. to 110 lbs.....	\$36.00
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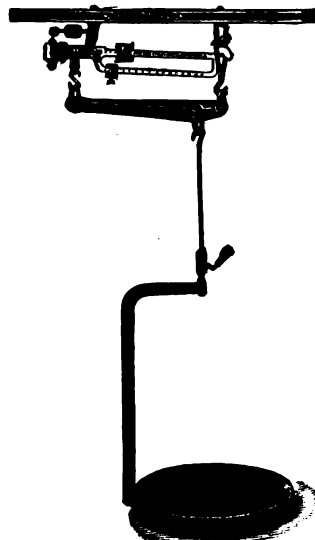


Prices on this Page Subject to Discount.

## Suspension Butter Scales



Swinging Pattern



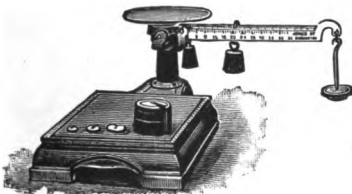
Suspension Pattern

These scales have the same advantages as the portable pattern, but are adapted to be fixed permanently in some suitable place. The swinging pattern is arranged with a crane, whereby it can be swung out of the way when not in use, while the suspension is adapted for suspension by rods from the ceiling.

	Capacity	Price
Swinging Pattern .....	115 lbs. x 1 oz.	\$23.00
Suspension Pattern .....	115 lbs. x 1 oz.	20.00

## Butter Salting Scale

"Roberts or Rennselaer"



This scale, which is made for the uniform salting of butter, has steel bearings. The only thing to know is how much salt to add to butter and a child can always salt butter alike.

Neatly japanned .....\$6.00

Prices on this Page Subject to Discount.

## Automatic Milk and Cream Scales

The accompanying cut represents a special scale designed for weighing milk in the pail, so as to determine the yield of each cow. Also used by cream handlers to weigh cream as collected at the different farms.

There is placed on the dial of this scale a loose indicator that can be adjusted and set by a thumb screw at the 0 mark, so as to balance the weight of the pail. This same indicator would thus show the net weight of the milk after milking. The capacity of these scales is 30, 60 and 120 pounds in pounds and tenths of pounds. With each scale we furnish special blanks, that will contain the record for two milkings a day for one week for fourteen cows. The balance can be used for general purposes.



### Prices

Scales, 30 pounds capacity, by 1/20 lb.....	each, \$5.00
Scales, 60 pounds capacity, by 1/10 lb.....	each, 7.00
Scales, 120 pounds capacity, by 1/5 lb.....	each, 9.00
Extra Records.....	net, per dozen, .15



## Union Scales

Capacity, ½ oz. to 240 lbs.

### Best Grade

With tin scoop and single beam .....	\$14.00
With tin scoop and double beam .....	15.00
With brass scoop and single beam .....	15.00
With brass scoop and double beam .....	16.00

### Common

Tin scoop and single beam.....	\$4.00
Tin scoop and double beam .....	6.00
Brass scoop and single beam .....	5.00
Brass scoop and double beam .....	7.00

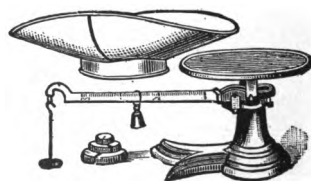
## Climax Scales

This little scale is made with steel bearings and a brass beam and will weigh accurately any package from one-quarter of an ounce to twenty-five pounds.

Nothing of the kind has ever been sold for less than \$8 or \$10.

Every scale is perfect.

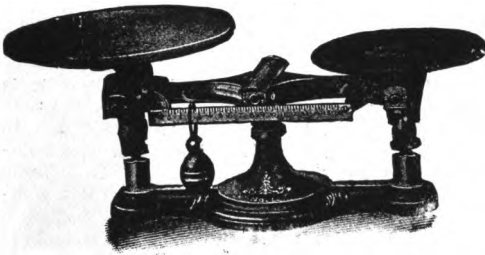
Scales, without scoop, boxed, weight 10 lbs. ....	each, \$3.00
With platform, tin scoop and balance weight .....	each, 3.50
With platform, brass scoop and balance weight .....	each, 3.75



Prices on this Page Subject to Discount.



# Scales



## Butter Trip

"Agate" Bearing. Cannot rust or corrode. First galvanized, then painted red, with brass tare beam and without scoop.

No.	Capacity	Price
825 A	25 lbs. to $\frac{1}{4}$ oz.	\$18.50
826 A	15 " " $\frac{1}{4}$ "	12.50
827 A	6 " " $\frac{1}{4}$ "	11.00

Price includes Galvanized Iron Weights, Six Agate Bearings, Large Round Concrete Porcelain Plate and Iron Plate. Extremely Sensitive. Above Prices NET, no Discount.

## "Common" Butter Trip

Steel Bearings, furnished in bright red color, not galvanized.

With Brass Tare Beam and Without Scoop

No.	Capacity	Diameter of Porcelain Plate	Prices with Iron Weights
825	16 lbs. to $\frac{1}{4}$ oz.	12 inches	\$14.25
826	10 " " $\frac{1}{4}$ "	10 "	11.00
827	6 " " $\frac{1}{4}$ "	8 "	8.75
828	2 " " $\frac{1}{4}$ "	6 "	7.00

Above Prices Subject to Discount

## Torsion Butter Trip Scale

Style No. 779

Metal Case and Weight Plate White Enamelled. Lower slide beam graduated to 16 ozs. by  $\frac{1}{8}$  oz.; upper slide beam operating from the center by 1-32 oz. to 1 oz. on either side. Sensitive to 10 grains. Arrest rod (knob in front of base) locks scale when not in use or when loading. Glass index on top of case. Porcelain plate 8 in. x 8 in. Price, including 1 and 2-pound Iron Weights, \$25.00.

Measurements

Base, 18 $\frac{1}{2}$  in. long; 7 in. wide; overall, 20 $\frac{1}{2}$  in. long; 9 in. high; 8 $\frac{1}{4}$  in. wide.



## Slanting Dial Scale

Silver finished dial and polished tin scoop

An accurate, convenient scale for creameries, cheese factories, milk dealers, ice cream makers and general counter and family use.

The dial sets at an angle; no stooping to read weight.

Made of the best cold rolled steel, light and strong.

Platform rests on double steel uprights, distributing weight and insuring accuracy.

Handsomely enameled and hand decorated.

Packed one in a box. Weight 4 $\frac{1}{2}$  pounds

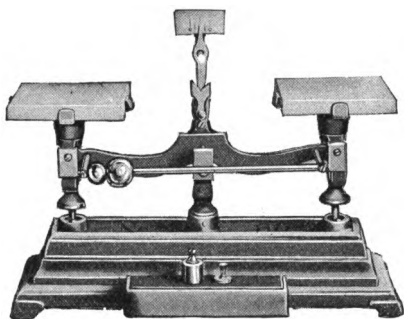
Price, each.....\$1.20



CAPACITY  
24 LBS.  
BY OZ.  
PAT. U.S.A.  
MAY 1, '06  
ALSO  
ABROAD

## Cream Test Scales

### Troemner Single Bottle

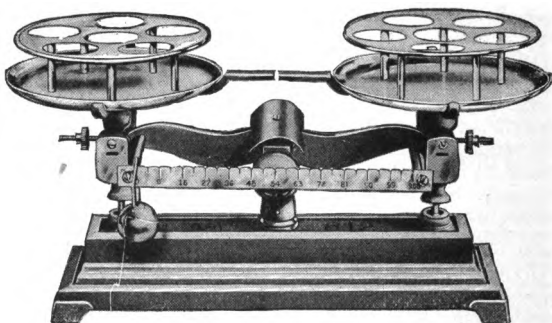


In testing cream by Babcock Test it is advisable to weigh the sample into the bottles. Cream being lighter in proportion to volume than milk, the pipette will not deliver a full charge for testing. This scale has been designed especially for cream sampling. It has agate bearings and porcelain weighing plates. It is very sensitive. Provided with balancing beam, one 9 gram and one 18 gram weights.

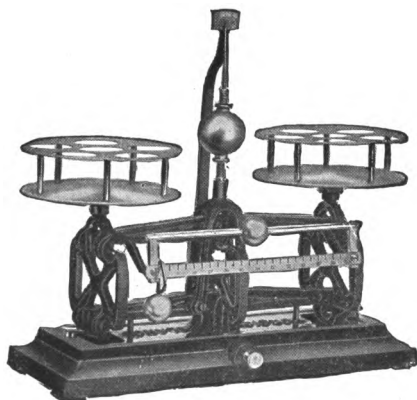
Price .....each, \$9.00

### Troemner Twelve Bottle

Where a large number of cream samples are to be tested at one time, it is more rapidly done by using a twelve bottle scale. The special advantages of this scale is that twelve empty bottles may be weighed as quickly as one. Each bottle is filled and weighed separately. Weights being notched into the beam for half and full samples and the weighing is quickly and accurately done. Agate bearings, nickel plated brass bottle holders. Price, 12 bottle....\$10.00  
Price, 6 bottle, single tray ..... 9.00



### Torsion Balance

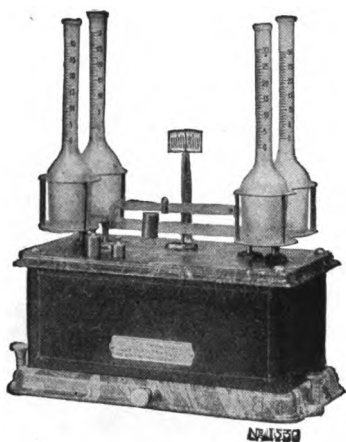


3005

Style No. 3005.

This is the highest grade cream test scale on the market. It has no knife edges and hence cannot become dull. There is no friction and the scale is therefore more accurate, more sensitive and more durable. It is the most sensitive scale that can be sold at such a low price, being exceeded in this respect only by analytical balances which are too delicate and too costly for this purpose. The cut shows scale with high poise, 9 inch beam, tare weight and arrest rod, designed to weigh 12 bottles. Sensitive to 3 centigrams.

12 Bottle High Poise, Without Arrest .....\$16.00  
12 Bottle High Poise, With Arrest ..... 18.00



Style No. 1530

## Cream Test Scales

### Torsion Balance

**Style No. 1500.**—Sensitive to  $\frac{1}{8}$  grain; has sliding tare poise; 3-inch German Silver pan; special bottle holder and arrest.

Price, including a 9 and 18 gramme weight, \$12.00.

**Style No. 1515.**—Similar to style No. 1500, with two single bottle holders.

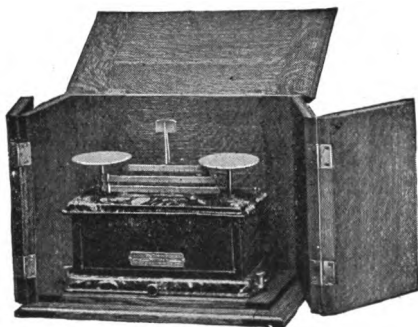
Price, \$13.00.

**Style No. 1530.**—Similar to style No. 1500, for four bottles.

Price, \$15.00.

### Folding Case and Wind Shield

The case protects the scale when not in use. It is made of oak with hinged top, front and sides. The top swings back and the front opens like two doors which fold back flat on the side, leaving only front of scale exposed. If so desired, front and sides may be swung entirely back, leaving scale protected only on the back. The case shields the scale from drafts, at the same time allowing plenty of room for operation.



Case Open

### Moisture Test Scale



**Torsion Balance, Style No. 1700**

**No Small Weights.**— $\frac{1}{10}$  % to 30% of moisture read direct from beams when ten gramme sample is used.

Price, \$15.00.

### Price of Cases

**Size A.**—For Scales Nos. 1700, 1500, 1515 and 1530, outside measurements  $12\frac{1}{2}$  in. long by  $7\frac{3}{8}$  wide,  $10\frac{3}{8}$  in. high.

Price, \$5.00.

**Size B.**—For Scales Nos. 3000, 3005, 3025 and 3030, outside measurements  $17\frac{1}{2}$  in. long by  $14\frac{1}{2}$  in. high by  $8\frac{1}{2}$  in. wide.

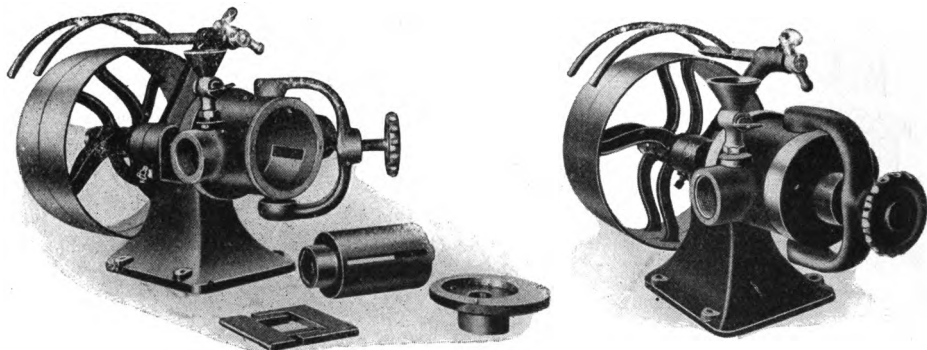
Price, \$6.00.

### Sample Weights—Guaranteed Accurate

9 gram for half size cream samples.....	Each \$0.50
18 gram for full size cream samples.....	.50
10 gram for butter moisture test samples.....	.50

# Sanitary Milk Pumps

(Patented Feb. 18, 1902)



The advantage of using a sanitary pump for elevating milk and cream is too apparent to need explanation. This new style pump is constructed especially for this need. It is built after the rotary pattern, experience having shown that this style is preferred. As will be seen from the illustrations, the pump is quickly taken apart for cleaning. The plate on the end of the cylinder is held in place by a yoke pivoted on the case. To take the pump apart it is only necessary to give the hand wheel a few turns, swing the yoke out of the way, when the cylinder plate may be lifted off and the cam head and cams removed. No packing is required to make a tight joint.

This pump is fitted with large pulleys, giving it powerful action and at the same time facilitating the speeding from the line shaft. Belt shifter and priming attachment furnished with each pump. For long lifts a vertical check valve should be placed in the suction pipe.

## Capacity and Prices

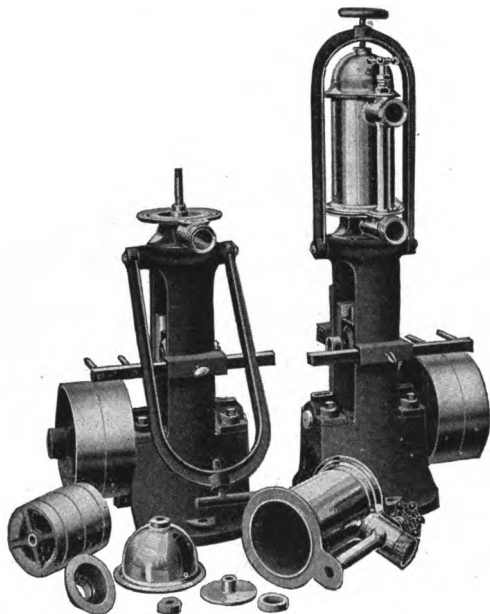
Pump No.	Capacity Per Hour	Pulleys T. & L.	Speed R. P. M.	Size Connections	List Price
1	4,750	10 x 2	160	1 inch	\$27.00
2	7,800	10 x 2	160	1 1/4 inch	32.00
3	12,000	10 x 2	160	1 1/2 inch	38.00
4	15,000	10 x 2	160	2 inch	43.50

## Extras for the Sanitary Pump

Cylinder complete	Each, \$9.40
Cylinder Case	" 6.00
Cylinder Plate	" 2.00
Cylinder Plate Cap Screws	" .05
Cam Head and Shaft	" 8.50
Cam Head	" 5.00
Cam Head Shaft	" 3.50
Cams	complete set, 2.00
Springs, 2 to set	set, .10
Frame	Each, 8.75
Lock Screw and Wheel	" .75
Lock Arm	" 1.50
Lock Arm Screw Hand Wheel	" .40
Eye Bolt	" .20
Eye Bolt Thumb Nut	" .15
Stuffing Box Nut	" .45
Pulleys, Tight and Loose	set, 3.50
Shaft Collar	each, .40
Belt Shifter, complete	" 2.25
Belt Shifter Arm	" 1.25
Belt Shifter Square Bar with Finger Arms and Handle	" 1.00
Priming Attachment	" 2.00

When ordering extras give size and serial number of pump.

## The Improved Duro Pump



The Duro is made especially for pumping milk, cream and other liquids of a character that requires a pump to be cleaned after each run. It has large capacity, high grade construction, and is consistently sanitary.

It is easy to take apart, easy to clean, and easy to put together again.

A few turns of the lock screw at the top permits the yoke to be swung out of the way. The cylinder lifts off, exposing the piston head and valves, which are easily removed.

The cylinder, valves and working parts coming in contact with the milk are made of a special bronze composition that will not rust or become coated with verdigris, or taint the milk even though the pump stands idle for a time.

The main bearings are babbitted. Drop forged crank shaft. Compression grease cups on all bearings. Pump can be driven in either direction. Cylinder can be turned in any direction so that suction and discharge pipes can come from either side. Suction and discharge have by-pass tube and valve for regulating the capacity from nothing to maximum while pump is running at full speed.

The pump as regularly furnished, is fitted for connection with our sanitary piping, which should preferably be used for the suction and discharge lines in order to make the entire system perfectly sanitary. To connect the pump with common pipe, special fittings are required and will be furnished at a small additional charge, but must be specified when ordering.

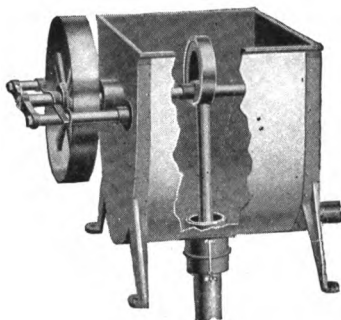
Owing to the correct design and accurate workmanship, the pump runs practically noiseless. The suction and discharge valves being air cushioned, there is no friction to injure the milk. Absence of noise means minimum wear.

### Sizes and Prices

Size	Capacity per hour	Connections (Sanitary)	Pulley T & L.	Speed R. P. M.	Shipping Weight	Price
1	8,000	1½ inch	2½ x 8	120	110 lbs.	\$60.00
2	16,000	2 inch	2½ x 11	120	125 lbs.	85.00

## Cream Pump

The 20th Century



This pump is identical with that used on the 20th Century Milk Heater. It is a powerful pump, perfectly sanitary and is extensively used for pumping cream from the ripener to churn. When used for this purpose it is usually suspended from the ceiling, or on a special stand, and high enough to discharge into the churn.

For the purpose intended this pump is highly recommended. It is all metal and can be cleaned in a few seconds' time. A dipper full of water will rinse out all the cream adhering to the pan. Thus there is no waste. By loosening two thumb nuts the cylinder can be taken out for cleaning. Pulley is 12 x 2. Capacity 6,000 pounds per hour.

Price .....\$40.00

## Power Milk Pump

This consists of a brass single acting cylinder, thumb nut connections, rod attachments and guide to work in connection with belt power. It is mounted on a plank, which is usually attached to wall or post and power connections made with a tight and loose pulley pumping jack hung from the ceiling. The pump is very convenient for cleaning, as by simply loosening two thumb nuts the brass cylinder may be removed.

### Sizes, Capacities and Price

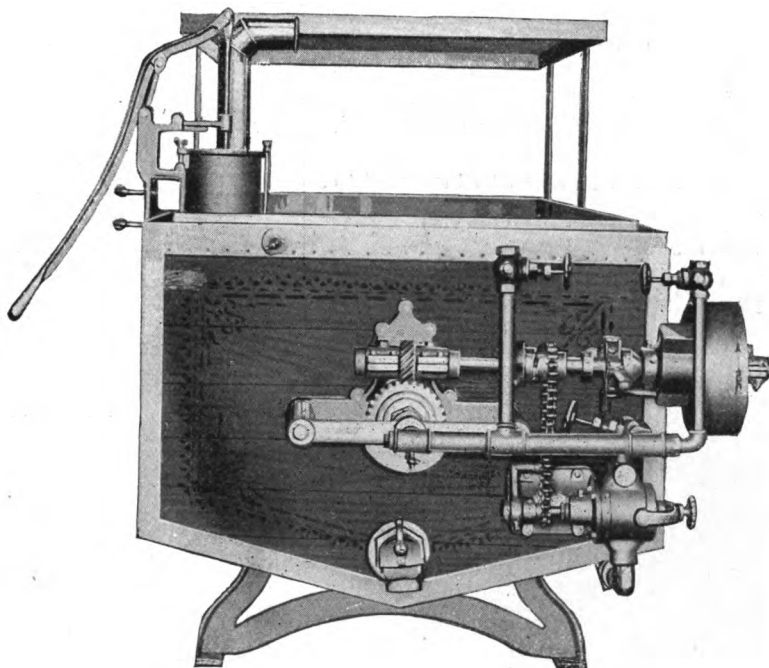
Size, 2½ x 6; Capacity, 300 gal. per hour; price.....	\$15.00
" 3 x 6; " 440 " " " " .....	18.00
" 3½ x 6; " 590 " " " " .....	20.00



Power Milk Pump

# The Hercules Cream Pump

## For Filling Churns



Simply attach the pump to the side or end of the vat, connect a conductor trough from the discharge spout to the churn opening and go ahead and pump. The pump elevates the cream high enough so that it flows by gravity to the churn, even though the latter is twenty feet or more away. A three hundred gallon vat can be emptied in ten or twelve minutes, and easier than you can do it in any other way.

A cream pump must be cleaned every day. In the Hercules that is all provided for. By loosening two thumb nuts the cylinder is released. Raise the cylinder half an inch or so and slip it off the piston. The suction valve is located in the cylinder head, which is part of the frame. The discharge valve is also located in the frame at one side of the cylinder. Both valves are uncovered when the pump is taken apart. The cylinder is simply a tube, open at both ends.

Clamp is adjustable for vats with walls up to five inches thick. Discharge spout can be turned in any direction.

The pump is made of best materials and will last a lifetime. It has been priced so reasonably as to be easily within the reach of all. It is especially suited to the average creamery making but one or two churnings a day. A hand pump is better than a power pump, for the reason that it is oftentimes desired to fill the churn early in the morning before steam is up, and power, therefore, not available. The large capacity, ease of operating, simplicity and ease of cleaning commend the Hercules Pump.

Price, complete ..... \$20.00

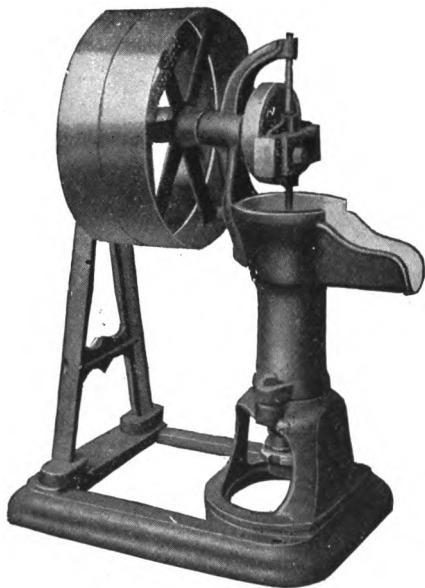
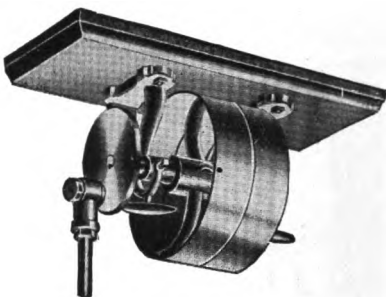
## Pump Counter Shaft

### Overhead Belt Power

Consists of countershaft with tight and loose pulleys, crank plate, stub rod connection and hangers mounted on plank. Used with deep well pumps, power milk pumps, etc. Made in two sizes.

Pulleys on small jack can be increased to 16x3.

Size Pulleys	Shaft	Hangers	Price
24x4	1 $\frac{7}{8}$ "	12-in. Drop	\$25.00
12x3	1 $\frac{7}{8}$ "	12-in. Drop	15.00



### Power Porcelain-Lined Milk Pump

Our Porcelain-Lined Pitcher Pump is arranged to run by power. This pump will be found very convenient to raise the milk from the receiving vat to the tempering vat. If so desired we can attach another pump on opposite end to pump the skim milk at the same time.

#### Prices

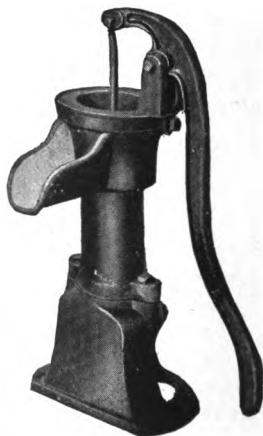
Single Pump, as above, complete..\$10.00  
Double Pump, as above, complete.. 20.00

### Patent Porcelain-Lined Pitcher Pump

With brass valve seat and revolving brake, bolt fastenings and cut-off base. Designed for pumping milk or buttermilk.

#### Prices

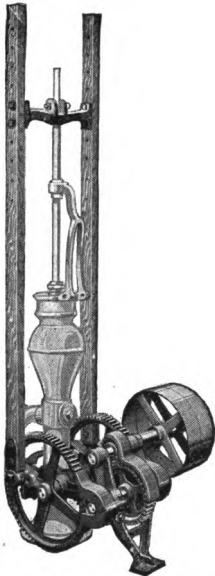
No. 1, 2 $\frac{1}{4}$ inch bore,	$\frac{3}{4}$ to 1	inch pipe.....	\$ 6.50
No. 2, 3	1 to 1 $\frac{1}{4}$	" .....	7.25
No. 3, 3 $\frac{1}{2}$	1 $\frac{1}{4}$ to 1 $\frac{1}{2}$	" .....	8.00
No. 4, 4	1 $\frac{1}{2}$	" .....	9.00
No. 5, 4 $\frac{1}{2}$	2	" .....	12.50



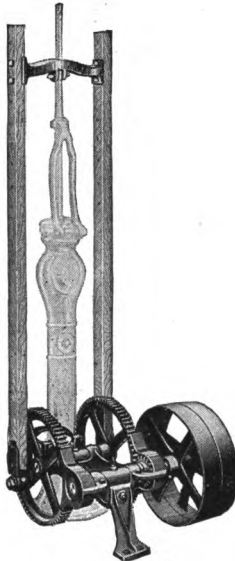


## Pump Jacks

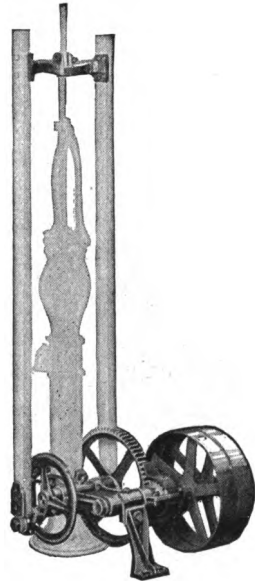
For deep well pump heads in creameries, cheese factories and on farms. We recommend the styles D or A double-gearred jacks for heavy service, the increased durability more than compensating for the moderate increase in first cost.



Style D.  
Double Back Gear.



Style A.  
Double Gear.



Style S.  
Single Gear.

**STYLE D.** The ratio of gearing is 8 to 1, the pulley making 8 revolutions for each complete stroke of the pump. Diameter of pulley, 10 in.; face,  $2\frac{1}{4}$  in., adjustable for strokes of 5,  $7\frac{1}{4}$  and  $9\frac{1}{2}$  inches. Has self-oiling feature and requires oiling not oftener than twice a year under ordinary service.

Price, F. O. B. factory.....\$8.00

**STYLE A.** The gearing has a ratio of 4 to 1. Pulleys, 13 inch diameter by  $2\frac{1}{4}$  inch face. Strokes of 5,  $7\frac{1}{4}$  and  $9\frac{1}{2}$  inches. Self-oiling.

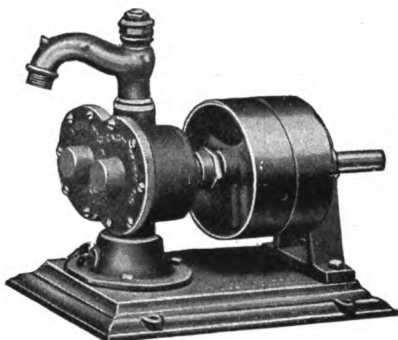
Price, F. O. B. factory.....\$7.00

**STYLE S.** Geared 4 to 1. Pulleys, 13 inch diameter by  $1\frac{1}{4}$  inch face. Stroke 5,  $7\frac{1}{4}$  and  $9\frac{1}{2}$  inches, adjustable. Self-oiling. This jack is not intended for heavy duty, but is satisfactory for shallow wells and medium size pump cylinders.

Price, F. O. B. factory.....\$5.50

## Force Pump

### Common Rotary



Sizes, Dimensions and Prices

Number	Suction Pipe	Discharge Pipe	Size Pulleys	At 100 Revolutions per Minute	Price, Iron	Bronze Case and Cams
1	1¼ inch	1 inch	7 x 2½ in.	Dis. 13 gal.	\$27.00	\$49.00
2	1¼ inch	1 inch	7 x 2½ in.	Dis. 14 gal.	32.00	56.00
3	1½ inch	1½ inch	7 x 2½ in.	Dis. 17 gal.	38.00	63.00
4	1½ inch	1½ inch	11 x 3 in.	Dis. 27 gal.	48.00	78.00
5	2 inch	2 inch	11 x 3 in.	Dis. 36 gal.	54.00	90.00
6	3 inch	2½ inch	14½ x 4 in.	Dis. 55 gal.	80.00	135.00

## Deep Well Pump

### Covered Crank Suction and Force

#### Prices

For either shallow or deep well and suitable for 1¼-inch pipe.

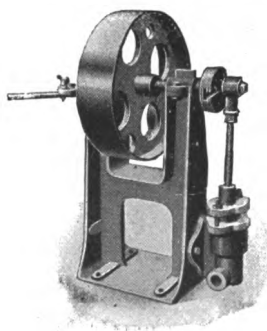
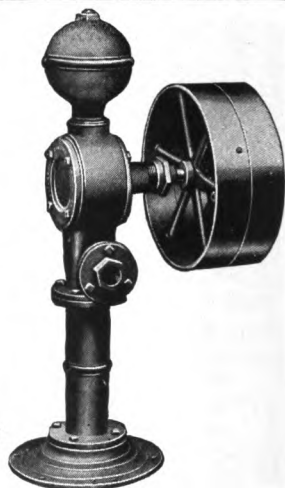
With tight and loose pulleys, 3x16.....\$30.00

With crank and single pulley, 3x16..... 25.00

Speed per minute, 50.

Above pump should have 3x16 cylinder.

For deep well, cylinders are extra.



## Victor Steam Boiler Feed Pump

Price considered, this Pump is unsurpassed for simplicity and durability.

Diam. of Clutch Pulley.....16 in.

Face of Clutch Pulley..... 3 in.

Speed per minute.....30 to 50 rev.

Inlet and Outlet, size..... 1 in.

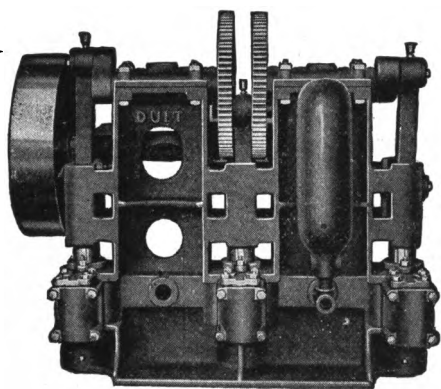
Height ..... 2 ft.

Weight .....175 lbs.

#### Price

With ¾-inch check valve..... \$20.00

## Single Acting Triplex Pump



These pumps can be used for any service when the pressure does not exceed 200 pounds. They deliver a steady stream and the pull on the belt is uniform.

Pumps are regularly fitted with pulleys, but will be furnished with cut gears for direct connected drive if desired.

	Sizes				
	in.	in.	in.	in.	in.
Cylinder ....	1½	2	2½	3½	4
Stroke .....	5	5	5	5	6
Suction .....	1½	1½	1½	2	2½
Discharge ...	1½	1½	1½	2	2
Gal. per min.					
at 60 rev..	9	12	16	35	55
Price .....	\$100	\$110	\$140	\$250	\$350

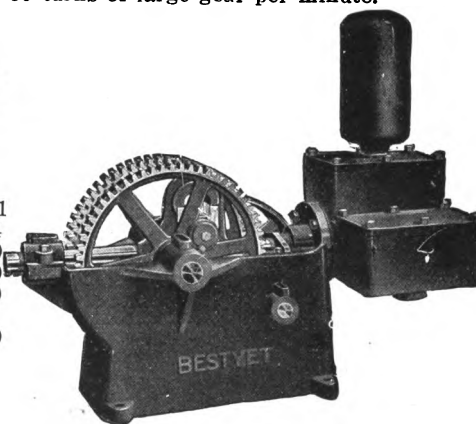
## Bestyet Pumps

**Style A** for general service for hot or cold liquids to 100 lbs. pressure or 230 feet elevation. A high-grade pump for practically all kinds of pumping.

**Style B** is made especially for pumping brine and liquids containing foreign matter. Valves can be cleaned while pump is running. Made for 100 feet elevation.

Capacities given in table are at 50 turns of large gear per minute.

Number	1	2	3
Cipher	Bacon	Borax	Bolter
Cylinder	3½ in.	4½ in.	5½ in.
Stroke	5 in.	6 in.	7 in.
Suction	1½ in.	2 in.	2½
Discharge	1 in.	1½ in.	2 in.
Pulley	12x3	14x4	16x5
Geared	5 to 1	5 to 1	5½ to 1
H. P.	1	2	4
Weight	250	450	700
Capacity	1,200	2,200	4,200
Price	\$70.00	\$80.00	\$130.00
Cylinder			
Brass lined	\$72.00	\$82.50	\$133.00



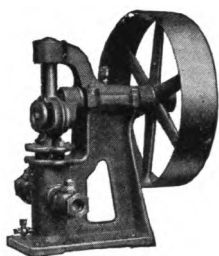
## The Air Compressor

The air compressor is fitted with double brass cylinders, calculated to stand heavy pressure. It is furnished complete with counter-shaft, connecting-rod and crank-plate.

### Specifications and Price

Length of Cylinder	Diameter of Cylinder	Speed	Size of Connections	Length of Stroke	T. & L. Pulleys	Price
15 in.	4½ in.	60	¾ in.	10 in.	2x24	\$25.00

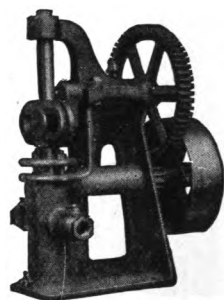




## Standard Pumps

For feeding boilers and other work to their capacity up to 125 pounds pressure.

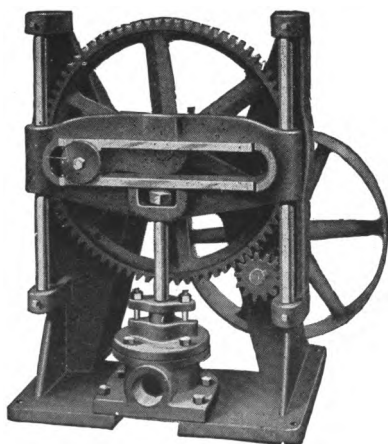
FOR HOT OR COLD LIQUIDS



Sizes and Prices of Standard Pumps

No.	Piston	Stroke	Pipes	Pulley	Price	Boiler Power	Weight	Gals. per hr.
1	1 Inch	2 Inch	$\frac{3}{8}$ Inch	12x2	\$18 00	3	35 lbs.	18
2	$1\frac{1}{8}$ Inch	$2\frac{1}{2}$ Inch	$\frac{3}{8}$ Inch	14x2	20 00	5	45 lbs.	30
2A	$1\frac{1}{8}$ Inch	$2\frac{1}{2}$ Inch	$\frac{3}{8}$ Inch	14x2	32 00	5	55 lbs.	30
3	$1\frac{1}{4}$ Inch	3 Inch	$\frac{1}{2}$ Inch	16x3	24 00	10	65 lbs.	60
3A	$1\frac{1}{4}$ Inch	3 Inch	$\frac{1}{2}$ Inch	16x3	38 00	10	80 lbs.	60
4	$1\frac{1}{2}$ Inch	3 Inch	$\frac{3}{4}$ Inch	16x3	28 00	15	75 lbs.	90
5	2 Inch	3 Inch	1 Inch	18x4	32 00	30	130 lbs.	180
6	$2\frac{1}{2}$ Inch	3 Inch	1 Inch	18x4	38 00	45	170 lbs.	270
7	2 Inch	6 Inch	$1\frac{1}{4}$ Inch	22x4	50 00	60	200 lbs.	360
8	$2\frac{1}{2}$ Inch	6 Inch	$1\frac{1}{4}$ Inch	14x4	70 00	80	300 lbs.	408
9	3 Inch	6 Inch	$1\frac{1}{2}$ Inch	14x4	85 00	100	400 lbs.	600
11	4 Inch	6 Inch	$2\frac{1}{2}$ Inch	18x4	150 00	300	700 lbs.	1800
12	$5\frac{1}{2}$ Inch	8 Inch	2D. $2\frac{1}{2}$ S.	20x5	170 00	500	850 lbs.	4500

The capacities are rated at fifty strokes per minute. Numbers 1 to 9 inclusive are single acting; numbers 11 and 12 are double acting; numbers 2A and 3A, also 11 are geared 5 to 1; numbers 8 and 9 are geared 4 to 1; numbers 2A and 3A are geared like 8 and 9; number 12 geared 6 to 1.



## The Allrite Deep Well Working Head

Handles a 4-inch cylinder 70 feet in well or a  $2\frac{1}{2}$ -inch cylinder 170 feet in the well.

Stroke 12 inches. Geared 6 to 1, pulley 18 inches by 4 inches. Weight 406 lbs. Pipe head tapped for 4-inch pipe.

Price .....\$70.00

# Force Pump

With Back Outlet and Stop Cock

This cut represents Force Pump Standard with the cock spout and back outlet with short length of pipe and cylinder. This standard is particularly adapted to forcing water into an elevated tank, as it has an outlet behind the spout for that purpose. It is made heavy and strong for deep wells. The suction pipe connection is under the spout which prevents liability to the destructive action of the frost. It is made anti-freezing in the usual way by a drip hole in the pipe below the base of pump. This pump is equally well adapted for windmill steam power or hand. Following are sizes and prices of Pump Standards:

No.	Fitted for	Stroke	Height	Price
428	1 1/4 inch pipe	6 inch	47 inches	\$12.50
428	2 inch pipe	10 inch	51 inches	14.00

Cylinder, Pipe and Plunger Rod are extra. With 10-inch stroke, for 2-inch pipe, a forked rod coupling for tubular wells is furnished when needed.

## Brass Cylinders

Size	Fitted for Pipe	Iron Attachments and Follower, Brass Cage and Valve	Iron Attachments and all Brass Plunger	All Brass
2 1/4 x 14	1 1/4 in.	\$ 9.25	\$10.50	\$14.75
3 x 14	1 1/4 "	10.25	11.75	16.25
3 1/2 x 14	1 1/2 "	12.25	14.75	21.00
2 1/2 x 16	1 1/4 "	10.25	11.75	16.00
3 x 16	1 1/4 "	11.25	12.75	17.25
3 1/2 x 16	1 1/2 "	13.50	16.00	22.25

## Iron Cylinders

Size	Stroke	Fitted for	Price
2 1/4 x 12	8 inch	1 1/4 in. pipe	\$ 6.00
3 x 12	8 "	1 1/4 "	7.00
3 1/4 x 12	8 "	1 1/2 "	9.00
2 1/4 x 14	10 "	1 1/4 "	6.50
3 x 14	10 "	1 1/4 "	7.50
3 1/4 x 14	10 "	1 1/2 "	10.00
2 1/4 x 16	10 "	1 1/4 "	7.00
3 x 16	10 "	1 1/4 "	8.00
3 1/4 x 16	10 "	1 1/2 "	11.25

## Pump Rods

3/8" steel in 16 ft. lengths, weighs .375 lbs. per foot, per lb .....\$0.05  
7-16" steel in 16 ft. lengths, weighs .511 lbs. per foot, per lb ..... .05

## Couplings for Pump Rods

Prices

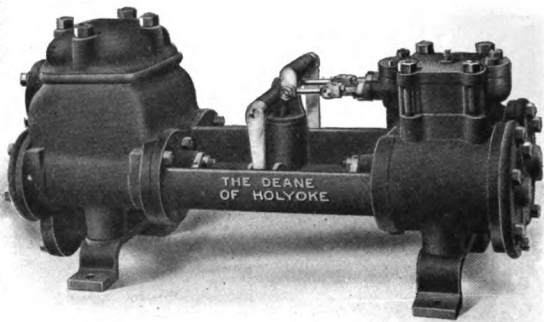
Fitted for Rod.....	3/8	7-16	3/8 x 7-16
Threads to inch .....	14	12	14 x 12
Malleable, per lb. ....	\$0.40	\$0.40	\$0.40
Galvanized, per lb.....	.60	.60	.60

# Duplex Boiler Feed or Pressure Pump

## Piston Pattern

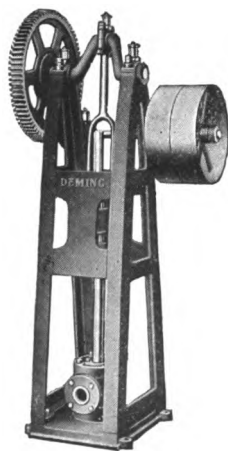
This style pump is fitted with positively actuated steam chest valves which never can get out of order and are always bound to operate. For feeding boilers under pressure not exceeding 200 pounds, the pump here listed and shown is generally preferable. The water end is of the packed piston type with removable heads, cap and valve plate. The pistons are fibrous packed,

and the valves are of rubber or metal to suit the requirements. These pumps will stand a constant water pressure of 200 pounds.



SIZE			CAPACITY		PIPE SIZES				Boiler Horse-power will Feed	Price Subject to Discount
Diameter of Steam Cylinder	Diameter of Water Cylinder	Length of Stroke	Strokes per Minute of One Piston	Gallons per minute of Both Pistons	Steam	Exhaust	Suction	Discharge		
2	1 1/4	2 3/4	100 to 300	2 to 8	3/8	1/2	1	3/4	30	\$ 50.00
3	2	3	100 to 250	8 to 20	3/8	1/2	1 1/2	1	85	55.00
4 1/2	2 3/4	4	100 to 200	20 to 40	1/2	3/4	2	1 1/2	180	90.00
5 1/4	3 1/2	5	100 to 200	40 to 80	3/4	1 1/4	2 1/2	1 1/2	310	120.00
6	4	6	100 to 150	65 to 100	1	1 1/2	3	2	445	140.00

Any of the above sizes can be furnished brass fitted and brass lined for brine circulating at an increase in price which is quoted on application.



## Power Geared Well Head

This pump is designed for operating single-acting deep well cylinders. It is strictly high grade throughout and capable of giving satisfactory service for a long period. This type of pump has a large capacity and shows considerable economy of power as compared with a steam head.

Bearings are babitted. Crank shaft is open hearth steel. Gears are machine cut. Connecting rod is steel with babitted boxes.

We furnish head of this type for all requirements and will, upon receipt of information as to depth of well, diameter and stroke of cylinder, etc., give complete specifications and quote prices.

## Steam Pumps for Milk "Moore"



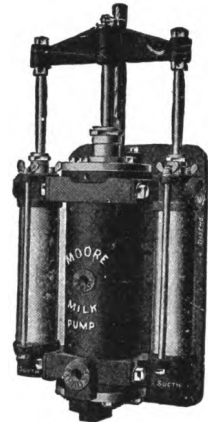
Single Milk Pump

The single Milk Pump consists of a single steam cylinder and pump cylinder. Made up similar to the double-acting milk pump. This is on an iron base, is single-acting, and easily taken apart and reassembled.

The Double Milk Pump consists of two brass single-acting pump cylinders, mounted on a neat cast iron base, between which is a steam motor, having proper piston cross head with guide connecting rods, etc. The pump cylinders being held in place by proper rods, thumb nuts and all made up to make it convenient for cleaning cylinders. Made one large for frothy milk, the other for sweet milk.

Price List Single Cylinder

Steam Cylinder	Milk Cylinder	Stroke	Gallons Per Hour	Shipping Weight	Price
3	2½	6	300	100	\$65 00
3	3	6	440	100	70.00
3	3½	6	600	100	80.00
4	2½	6	300	110	75.00
4	3	6	440	110	80.00
4	3½	6	600	110	90.00



Double Milk Pump

Price List Double Cylinder

Diameter of Cylinders			Stroke	Shipping Weight Lbs.	Price
Steam	Milk	Milk			
3	2½	2½	6	75	\$ 80.00
3	2½	3	6	75	82.50
3	3	3	6	75	85.00
3	3	3½	6	75	87.50
3	3½	3½	6	100	90.00
4	2½	2½	6	100	85.00
4	2½	3	6	100	90.00
4	3	3	6	100	95.00
4	3	3½	6	100	102.50
4	3½	3½	6	125	110.00

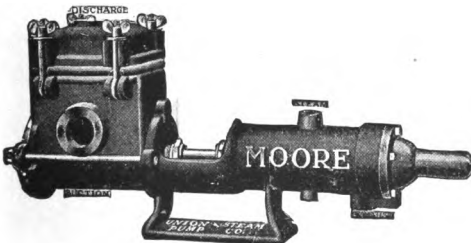
## Capacity

2½ inch milk cylinders .....	300 gal. per hour
3 " " " .....	440 " " "
3½ " " " .....	600 " " "

## Horizontal Milk Pump

The steam cylinder and valve construction is the same as used in the regular line of Moore pumps the steam exhaust being taken care of at the end and underneath the steam cylinder.

The milk end is very simple in construction and easily taken apart for the purpose of cleaning by turning the thumb nuts and swinging arms out of sockets. The hood can be lifted off, making the valves and inside easy of access. By unscrewing nuts shown at the extreme left end of cylinder, the entire milk end can be removed for the purpose of cleaning the piston and inside of milk cylinder.

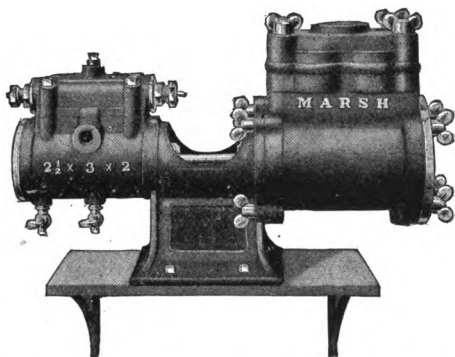


Price List

Steam Cylinder	Milk Cylinder	Stroke	Gallons per Hour	Shipping Weight	Price
2½	2	3	375	60	\$45.00
2½	2½	3	600	60	45.00
2½	3	3	825	70	50.00
2½	3½	3	1125	80	50.00
3	3	3	825	80	50.00
3	3½	3	1125	100	60.00

# Steam Milk Pumps

## "Marsh" Single Cylinder



The illustration shows the new "Marsh" Pump, designed to handle creamery products, and is especially adapted for elevating whole milk, cream or skimmed milk.

The pump cylinder can be quickly taken apart for cleansing without the use of a wrench—being provided with thumb nuts at fastening studs, as shown in cuts, and pipe connections made with hand grip unions. All parts of pump cylinder are made of best iron and steel—no brass.

Creamery operators will appreciate the advantages offered by this independent steam pump over the ordinary plunger or rotary belt-driven machine, as it can be used when the engine is not running—occupies little space and can be located where most convenient—and can be regulated to

deliver any required amount of liquid within its capacity, ranging from 25 to 2100 gallons per hour.

Size	Gallons per hour	Steam Pipe	Exhaust	Suction	Delivery	Weight	Price
2½ x 3½ x 2	900	¾	¾	1½	1½	70	\$50.00
5 x 6 x 3½	2100	¾	¾	3	2½	285	125 00

## "Marsh" Single and Double Cylinder

Designed Especially for Pumping New and Skimmed Milk

Without pulleys, shafting or belting. It is self-regulating in every way, and it is the cheapest and most economical device for the purpose yet offered.

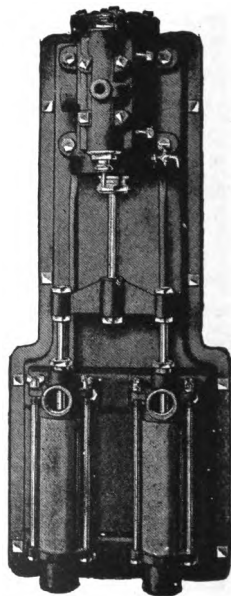
The pump cylinders are nicely finished, and are constructed entirely of brass, the rods are connected by yoke to a 4 x 6 Marsh engine. Steam pipe ¾ in., exhaust ¾ in.

Cylinders and pistons are easily removed for cleaning.

The engine and pump cylinders are mounted upon a neat and substantial iron base plate, and can be fastened to post or side of wall.

### Sizes and Prices

No.	Size	CAPACITY In Gallons per Hour		Weight	Price
		Each Cyl.	Both Cyls.		
7	4 x 2½ x 6	300	....	140	\$75.00
8	4 x 2½ x 2½ x 6	300	600	150	85 00
9	4 x 3 x 6	440	....	145	80 00
10	4 x 3 x 3 x 6	440	880	160	95 00
11	4 x 3½ x 6	590	....	155	90 00
12	4 x 3½ x 3½ x 6	590	1180	165	110 00





## Moore Deep Well Engine



Moore Style 4x6, 4x8  
and 5x10

The Moore Deep-Well Head, or Engine, as shown in the cuts, has no outside valve gear. Clearances and cushions are provided for in the cylinder, exhaust, and portings. It is a strong, well-made engine, and for pumping purposes is very satisfactory as a low-priced Deep-Well Head.

Openings are provided on two sides of the stand, one of which can be used for attaching an air chamber if desired, or for taking water from more than one side when desired.

The price given is for the Head only.

Extra is charged for cylinder, pipe and pump rod.

Size	Steam	Exhaust	Suction	Delivery	Well Rod	Ship. wt.	Price
4x 6	$\frac{3}{8}$	$\frac{3}{8}$	2	1	$\frac{1}{4}$	100	\$40.00
4x 8	$\frac{3}{8}$	$\frac{3}{8}$	2	1	$\frac{1}{4}$	100	50.00
5x10	$\frac{1}{2}$	$\frac{1}{2}$	2½	1½	$\frac{3}{8}$	225	80.00

## Deep Well Engine The "Marsh"

This Engine is designed for general pumping, and is adapted for pumping water from deep or shallow wells for farms, factories, dwellings, etc. Is self-regulating in every way, and the cheapest and most economical device for the purpose yet offered. It can be attached to any plunger rod; will elevate water from any depth, and do it constantly without any attention.

### Specifications and Prices

Steam Diameter Cylinder	Stroke	Steam Pipe	Exhaust Pipe	Well Rod	Well Pipe	Delivery Pipe	Weight, Lbs.	Price
4	6	$\frac{3}{8}$	$\frac{3}{4}$	$\frac{3}{8}$	2	1¼	80	\$ 40.00
4	8	$\frac{3}{8}$	$\frac{3}{4}$	$\frac{3}{8}$	2	1¼	85	50.00
5	12	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	2½	2	200	80.00
6	12	$\frac{3}{4}$	1	$\frac{1}{2}$	3	2½	250	100.00

Above prices subject to discount. Prices do not include water cylinder.



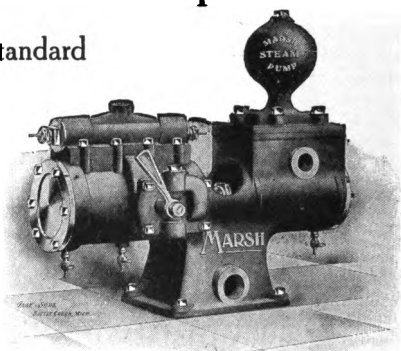
# Steam Boiler Feed Pumps

## Marsh Standard

Marsh Pumps offer a satisfactory and reliable means for feeding boilers under low pressure steam. They can be arranged to take the condensed water directly from the coils, and return it to boiler under most unfavorable conditions.

The lever shown on the front of the pump is attached to a two-way valve, and is used to deflect the exhaust steam, either into the atmosphere or into the suction chamber of the pump. When the exhaust steam is deflected into the suction chamber, it is condensed by the cold water and returned with its heat to the boiler. Thus all the heat employed in the steam which runs the pump is saved, and the work done by the pump is obtained without cost.

These pumps are fully guaranteed.



Size	Steam Cylinder	Water Cylinder	Stroke	Gallons per Stroke	Gallons per Minute	Steam Pipe	Exhaust Pipe	Suction Pipe	Delivery Pipe	Floor Space	Horse Power	Weight	Price
B	2½	1½	2	.0128	3.33	¾	¾	¾	¾	7x14	20	45 lbs.	\$ 30.00
B B	3	1¾	2½	.0260	6.66	¾	¾	1	¾	8x17	35	75 "	50.00
C	4	2½	3	.0575	10.83	¾	¾	1¼	¾	10x21	60	150 "	75.00
D	5	3	3½	.1071	16.66	¾	¾	1½	1	11x23	100	200 "	100.00

Prices subject to discount.

## Moore Boiler Feed Pumps



Letter Size	Steam Cylinder	Water Cylinder	Stroke	Pipe Connection				Gallons per Hour	Horse Power Guaranteed	Price	Extra for Hand attachment
				Steam	Exhaust	Suction	Discharge				
B	2½	1¾	2	¾	¾	¾	¾	200	20	\$ 30.00	\$5.00
B B	3	1½	2½	¾	¾	¾	¾	350	35	40.00	6.50
B C C	3	1¾	3	¾	¾	1	¾	500	50	45.00	7.50
B D	4	2½	4	¾	¾	1¼	¾	550	55	50.00	7.50
B E	5	3	4	¾	¾	1½	¾	700	70	75.00	.....
B F	5	3½	4	¾	¾	1½	¾	800	80	87.50	.....
B G	5	3¾	4	¾	¾	1½	¾	900	90	90.00	.....
C D	5	3	6	¾	¾	2	¾	1000	100	100.00	.....
C E	5½	3¼	7	¾	¾	2½	¾	1250	125	125.00	.....
C F	5½	3½	7	¾	¾	2	¾	1500	150	145.00	.....
C G	6½	3¾	8	¾	¾	2	¾	1760	175	160.00	.....
.....	6½	4	8	¾	¾	2½	¾	2044	200	175.00	.....
.....	6½	4	8	¾	¾	2½	¾	2580	250	200.00	.....

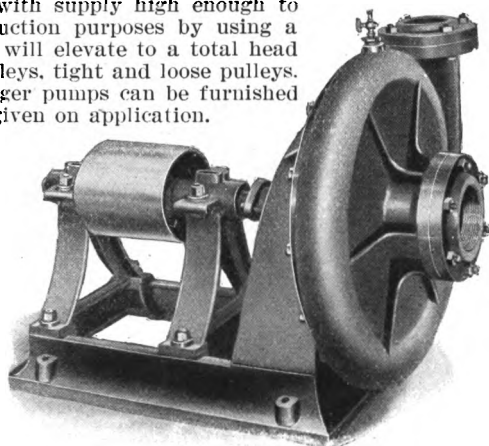
Prices subject to discount.

## Centrifugal Pumps

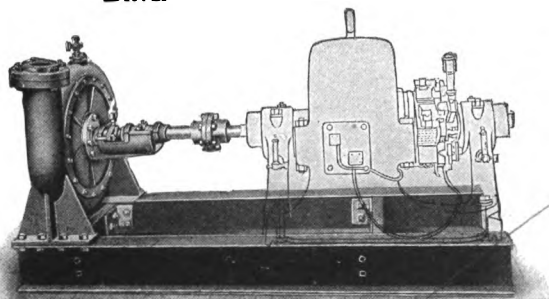
For circulating hot or cold water or brine, muddy or gritty water, for feeding cooling apparatus, the centrifugal pump is unsurpassed by any other type. Extremely large capacity, noiseless and wear indefinitely. Expansion of metal due to circulating hot water does not affect the running of this type of pump. Centrifugal pumps are ordinarily used with supply high enough to run into pump, but may be used for suction purposes by using a primer attachment. Single stage pumps will elevate to a total head of 60 feet. We list pumps with tight pulleys, tight and loose pulleys, and for direct electric motor drive. Larger pumps can be furnished if wanted, and full information will be given on application.

Type G Pump—Single Pulley

No. Pump	Capacity per min.	Size of Pipe		Pulley		Price Iron	Extra Brass Fitted	Price Brass
		Disch.	Suct.	Diam.	Face			
1	30 gal	1"	1½"	4"	3"	\$30 00	\$ 6 00	\$ 35 00
1½	70 "	1½"	2"	5"	3½"	45 00	15 00	75 00
1¾	90 "	2"	2½"	6"	4"	60 00	18 00	100 00
2	120 "	2"	3"	6"	6"	75 00	22 00	140 00



Type G Pump—Electric Motor Drive.



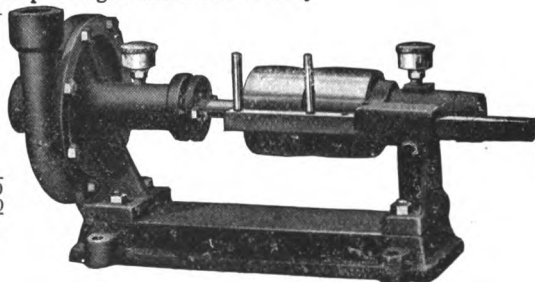
This pump is the same as the single pulley pump, but is mounted on frame to receive an electric motor. To adapt this pump to various motor speeds special construction is necessary, therefore inquiries should always state voltage and kind of current used, amount of liquid to be pumped and total height to which liquid is to be raised. Prices in table below are for pump complete with frame to receive motor, *but do not include motor.*

No. Pump	Approx. Capacity Gal. per minute	Price Iron	Price Brass Fitted	Price Brass
			Extra	
1	10-30	\$ 70 00	\$ 6 00	\$ 70 00
1½	50-70	80 00	15 00	110 00
1¾	70-90	110 00	18 00	140 00
2	100-120	140 00	22 00	190 00

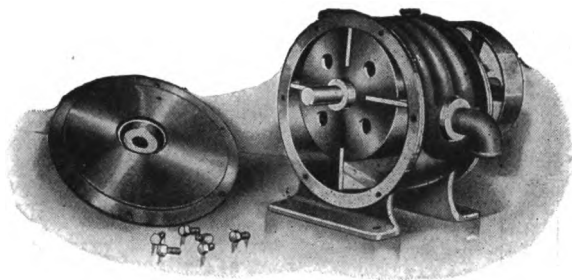
Type A Pump—Tight and Loose Pulley

Size of Discharge	Gallons per min.	Pulley	Weight, Lbs.	Price, Iron	Price, Brass Fitted	Price, Primer Ext.
1"	25	2x2½	45	\$40 00	\$50 00	\$15 00
1½"	75	4x4	125	60 00	75 00	15 00

Prices on This Page Subject to Discount.



## Positive Pressure Blowers and Exhaust Fans



In connection with the cream aerating and purifying system described on page 45 there is used a positive pressure blower and an exhaust fan, the former to force the purified air through the cream and the latter to carry off the odors and vapors arising from the cream.

The diagram on page 45 will show the manner of connecting up.

### U. S. Positive Pressure Blower

The illustration herewith is of a simple positive pressure blower suitable for the aerating system. It may, of course, be used for other purposes. It is very simple in construction. The impellers or wings are always flush with the inner shell. There are no internal gears to get out of line, to wear, or rattle, and the impellers can be replaced by anyone capable of taking off one side of blower and slipping them in place.

#### Specifications No. $\frac{1}{4}$ X Blower

Capacity 41 cubic feet per minute. Pulley 10 x  $2\frac{1}{2}$  in., 400 to 450 R. P. M. Outlet is  $1\frac{1}{4}$  in. Shipping weight 95 lbs. Pressure from 1 to 3 lbs., and requires  $\frac{3}{4}$  to 1 H. P., according to pressure. Price, \$50.00. Extra for loose pulley, \$2.50.

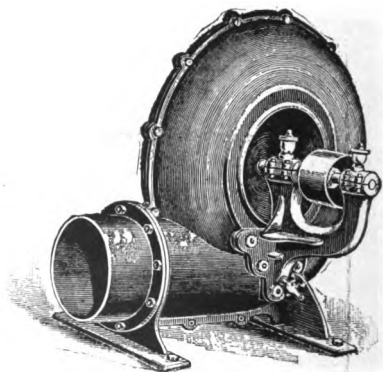
One smaller and five larger sizes of this blower can be furnished.

### Exhaust Fan

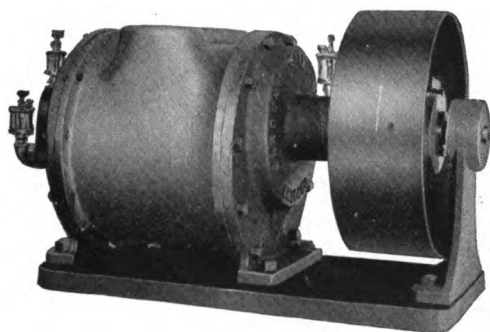
The No. 3 exhaust fan illustrated is especially adapted to the cream aerating system. It is  $21\frac{1}{2}$  inches high and is driven by pulley  $3\frac{1}{2}$  in. diameter by  $2\frac{1}{2}$  in. face. Speed should be 2300 R. P. M. or over. This fan can also be used for ventilating.

Price No. 3 Exhaust Fan.....\$30.00

Specifications and prices of smaller and larger exhaust fans will be given on application.



## Blowers—Power Style



We illustrate what we consider to be the best positive blower on the market.

It is noiseless, powerful and free from all complications of gears and intermeshing pistons or revolvers.

### Operation.

The operation of this blower is not on the fan principle, in which pressure is obtained by a high velocity of speed; but when the air enters the case at the inlet and is closed in by the vanes of the blower, it is absolutely confined and must be forced forward until finally released at the outlet, where it must have escape or the blower stop if outlet is closed. There is positively no chance for loss by backward es-

capement of air, after it once enters the inlet.

In many respects this blower has points of superiority over any Positive Blower made, and we call your attention to the following points:

1st. It has no gears whatever. No internal parts that require attention, adjustment or lubrication.

2d. It has only two journal bearings that are external to the blower casing. They are self-oiling. Easy of adjustment.

3d. Has no irregular internal surfaces that require contact to produce pressure, and add friction.

4th. Operating parts are always in perfect balance; thus blower may be safely run at a higher speed than any Positive Blower made, giving a proportionate increase in efficiency and a smaller blower may be used.

5th. A higher pressure can be obtained than is possible with any other.

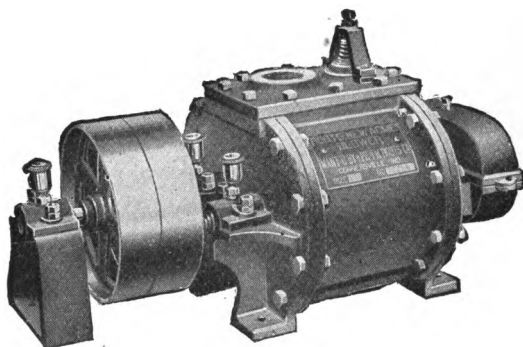
6th. The blower is practically noiseless as compared with all other makes.

### Specifications and Prices.

Size Blower	Price	Diameter Inlet and Outlet, inches	Discharge per Revolution	Speed	Cubic Feet per Minute	Size of Pulley	Weight of Blowers, Pounds	Floor Space Extreme, Inches
No. 00	\$ 45.00	1	70 Cu. in.	500	20 Cu. ft.	8x2	75	14x8
" 0	55.00	1¼	170 "	450	45 "	10x2	135	18x10
" x	80.00	2½	¼ Cu. ft.	350	90 "	12x3	230	20x12
" ⅛	105.00	2½	⅜ "	350	130 "	12x4	265	29x12
" ¼	150.00	3	1 "	300	210 "	14x4	350	26x14
" ½	225.00	5	1¾ "	250	440 "	20x5	950	36x18
" 1	300 00	8	3¼ "	200	750 "	26x6	1200	40x24
" 2	450.00	10	6¼ "	200	1350 "	30x8	1700	50x24
" 3	650 00	12	14 "	175	2450 "	43x10	4250	72x36
" 4	750.00	14	21 "	175	3675 "	43x10	5480	96x36

Prices Subject to Discount.

## Acme Power Blower



This style of blower is used largely for aerating cream when pasteurizing in Wizard Agitators, a system which is rapidly coming into general use. The blower discharge is connected with sanitary piping to a distributing pipe immersed in the cream. By blowing a large volume of pure air through the cream while heating the foul flavors are driven off. Sometimes the air is filtered through lime water. We shall be pleased to devise suitable systems for our customers or to give any further information on the subject desired.

The Acme Blower is well suited to this work. It takes but little power, runs quietly and is easy to care for. Each blower is shipped complete and ready to run.

No. 3 size, with outboard bearing, displacement 172 cubic inches of air, speed 400 R. P. M. Price .....\$50.00

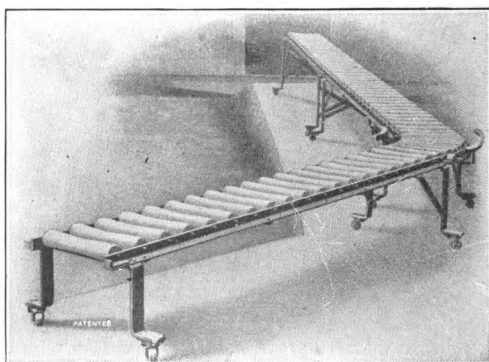
## A-F Gravity Conveyors

This cut shows the simple conveyor arranged to unload milk cans from a car.

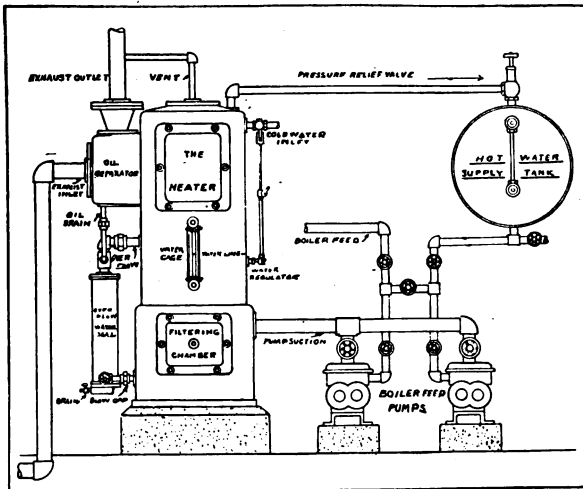
With this system boxes, barrels, tubs or cans can be transported from one place to another about the plant by gravity, saving a lot of lifting and trucking.

There is no conveying problem about a dairy or creamery plant that can't be solved at a big saving in operating expense with the A-F system. It includes equipment for conveying anything in cans, boxes, barrels or tubs from any place in the plant to any other place in that plant whether the destination be above, below or on a level with the starting point.

Write for complete information.



# Hot Water Supply System



The fuel bill is a large item in the expense of operating a first-class dairy plant. A good feed water heater will reduce this expense by from 15 to 30 per cent, by supplying the boiler with water at a temperature of over 206 degrees, and free from carbonate of lime, practically preventing boiler scale and prolonging the life of the boiler. A scale 1-16 inch thick requires 16 per cent more fuel. By installing additional equipment in connection with the heater, the plant can be supplied with an abundance of hot water, at no expense whatever.

Assuming that steam is used for driving the engine only, it requires only 16 per cent of the exhaust to heat the feed water, leaving 84 per cent available for heating water. For a 15 H. P. engine this will heat from 200 to 300 gallons per hour. Where live steam is used for other purposes, as is generally the case, the proportions are changed somewhat; in practically every case there is sufficient exhaust steam going to waste to heat all the water needed in the plant. For example: With a boiler load of 15 H. P. and an engine load of 10 H. P., the exhaust steam will heat the feed water, and in addition heat from 125 to 200 gallons of water per hour to practically the boiling point.

## Equipment Needed

The accompanying drawing shows the simple way in which the apparatus is arranged. It consists of two small steam pumps, one to supply the boiler, the other the hot water tank, for general use of hot water in the plant, which can be located on top of the boiler or at any convenient point, the open feed water heater and connecting pipes.

The table below gives the necessary sizes of equipment for boilers of various capacities:

H. P. Boiler	Size No. of Sims Heater	• Size Tank	Cap. Tank in Gals.	Size Boiler Feed Pump—Deane	Size Circulating Pump—Deane
Up to 50	1	30" x 72"	220	3x2x3	3x2x3
50 to 100	2	36" x 72"	315	4½x2¾x4	3x2x3
100 to 150	3	36" x 93"	420	5¼x3½x5	4½x2¾x4
150 to 200	4	33" x 120"	520	6x4x6	4½x2¾x4

## Sims Feed Water Heaters

You can save from 10 to 15 per cent of your fuel under ordinary conditions by heating the feed water.

### Percentage of Saving in Fuel by Heating Feed Water Steam at 70 Pounds Gauge Pressure

Initial Temperature Feed	TEMPERATURE TO WHICH FEED IS HEATED							
	100	120	140	160	180	190	200	210
35	5.53	7.24	8.95	10.66	12.38	13.24	14.09	14.95
40	5.12	6.84	8.56	10.28	12.00	12.87	13.73	14.59
50	4.30	6.03	7.76	9.51	11.24	12.11	12.98	13.85
60	3.47	5.21	6.96	8.72	10.47	11.34	12.22	13.10
70	2.62	4.38	6.15	7.92	9.68	10.57	11.45	12.34
80	1.76	3.54	5.32	7.11	8.89	9.78	10.67	11.57
90	.89	2.68	4.48	6.28	8.07	8.98	9.88	10.78
100	....	1.81	3.62	5.44	7.25	8.16	9.07	9.99



Sims Closed  
Heater

Every 11 degrees the feed water is heated represents a saving of one per cent in fuel.

Sims feed water heaters are made in two styles, "closed" and "open." The closed heater is so constructed that the exhaust steam and feed water do not come in direct contact with each other. In the open heater the steam enters at one point and the water at another, the two coming in contact, thus bringing the temperature of the feed water to near the boiling point. The choice of heater depends on local conditions in each plant.

### Closed Heater

Made with 1½-inch brass seamless tubes through which feed water flows. Shell made of cast iron and therefore not subject to corrosion. Top removable for cleaning. Positive and uniform circulation of the water is assured. The exhaust steam being admitted at the point where the feed water leaves the heater, the temperature is raised to within a few degrees of the boiling point.

### Price List

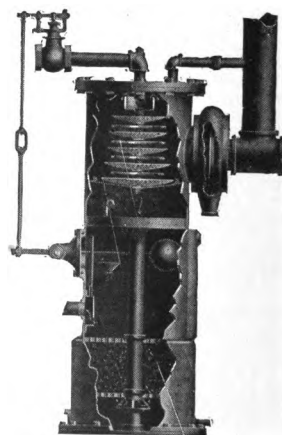
No. of Heater	Horse Power	Diameter of Exhaust	Feed Pipe in Inches	Approximate Weight	Price
1	30	3	1	220	\$105.00
2	40	3	1	260	115.00
3	50	4	1	285	125.00
4	60	4	1	320	140.00
5	80	5	1¼	650	160.00
6	100	5	1½	800	180.00

### Open Heater and Purifier

Inverted perforated saucers suspended from a bolt hook distributes the water evenly. Water flows into receiving tray, then through the filter; water cannot get into line without passing through filter. A suitable skimmer is provided, so that surface of water can be blown at any time. Blowing off thoroughly washes filter. Made of cast iron to prevent corrosion.

No.	H. P.	Diameter of Exhaust	Feed Pipe	Approximate Weight	Price
1	50	4	¾	1050	\$250.00
2	100	4	1	1200	275.00
3	150	5	1¼	1500	350.00
4	200	8	1½	1700	400.00

Prices on this Page Subject to Discount.

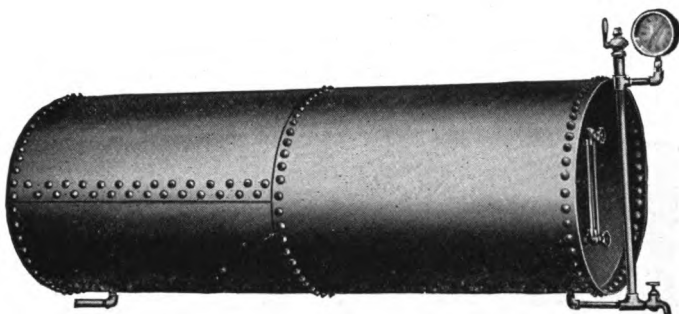


Sims Open Feed  
Water Heater and Purifier



## Steel Pressure Tanks

### For Hot Water Reservoirs and Other Purposes



In connection with the hot water supply system described on page 349, there is required a steel pressure tank, similar to the one illustrated above, but fitted with relief valve, man-hole and water gauge. The pressure gauge is not necessary. Following is a list of standard storage tanks for pressure not exceeding 65 pounds. Prices do not include any fittings, which are supplied extra at regular prices. See lists elsewhere in this catalog.

Capacity Gallons.	Diam. Inches.	Length Feet.	Weight Pounds.	Price Plain Tank.
100	24	4	300	\$47.00
150	30	4	420	55.00
220	30	6	540	64.00
295	30	8	660	77.00
315	36	6	740	82.00
365	36	7	820	90.00
420	36	8	900	96.00
525	36	10	1060	106.00
575	42	8	1080	116.00

Man-hole in end add \$15.00 to list.

Man-hole in shell add \$25.00 to list.

Hand-hole in end or shell add \$5.00 to list.

## The C. P. Horizontal Gasoline Engine

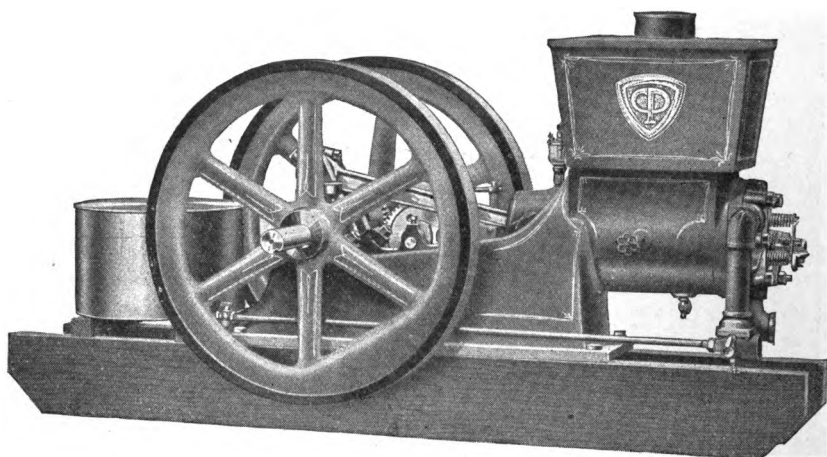


Illustration of Engine with Wood-Skid Mounting

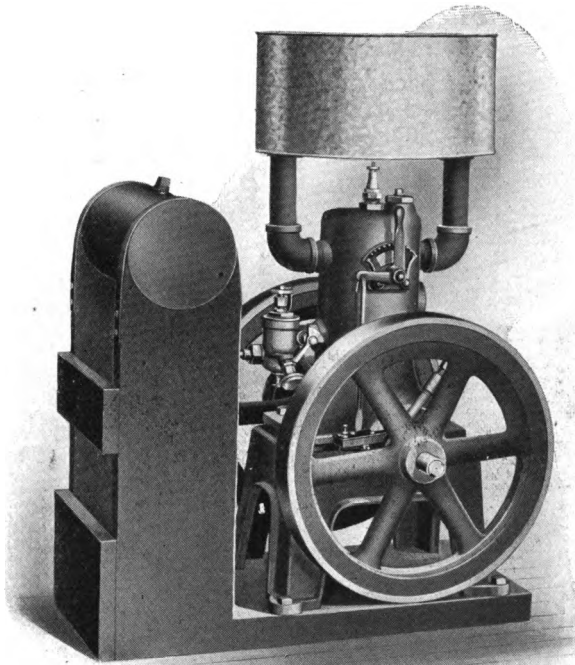
In the C. P. Engine we furnish a plain, practical, full power horizontal engine at an extremely low price, quality considered. It is a four-cycle engine with hopper cooling system, automatic mixer and make and break igniter. Governor is of the centrifugal type, positive in its action, simple, sensitive, controls speed perfectly and can be regulated while the engine is running. Each engine is tested before shipping, and is guaranteed to develop full rated power under brake test, and the engine is guaranteed against defects in material and workmanship. Engines are complete and ready to run.

The engines listed below are all the same pattern. We furnish them with wood skid mounting, special iron sub-base mounting or portable, i. e., mounted on steel trucks. Prices are F. O. B. factory.

H. P.	Price Skid Mounting.	Price Iron Sub-base.	Price Hand Portable.	Price All-Steel Horse Portable with Fric. Clutch.
1½	\$ 32.50	.....	\$ 39.50	.....
2¼	50.00	\$ 53.00	59.50	.....
4½	85.00	89.25	95.00	.....
6	120.00	126.75	.....	\$195.00
8	175.00	181.75	.....	240.00
12	250.00	259.00	.....	330.00

Styles not listed are not furnished. Horse Portable Mounted engines have Friction Clutch. Prices are strictly Net.

# The C. P. Separator Engine



Creamery and dairy-men have for a long time wanted a gasoline engine capable of driving a cream separator as steadily and at as uniform a speed as by steam engine or electric motor. The ordinary "hit and miss" four-cycle engine runs with such a great variation in speed that the best skimming efficiency of the separator is reduced and the delicate mechanism is stripped and pounded.

The "C. P." Separator engine is built in the vertical type and has an absolute speed control. There is a power-stroke at each revolution of the flywheel. Being a vertical engine, the shock of the stroke and the resulting vibration is not

transmitted to the machine which the engine is driving, but it is directed against the base. The increased efficiency will bring results due to a more thorough skimming and separation. The engine carries our guarantee for a permanent and satisfactory service. It is built along the usual marine engine lines and thus can be easily handled by anyone.

The materials are of the best; gray iron cylinder; anti-friction bearings; sight feed oilers; water-cooling and heavy flywheels.

The water tank is only 34 inches from the floor and thus requires no heavy lift to fill; the gasoline tank is still lower. The engine complete can be easily moved by two men.

Four-inch flange pulley, capable of a speed of from 300 to 500 R. P. M. At least a 20-inch pulley on the separator will be required to reduce the speed to the proper ratio. However, should you want the speed of the engine pulley reduced, we can easily accommodate you with a small reducing gear, which is keyed to the engine shaft on the side and will give you a 3-inch pulley running about 240 R. P. M. Large pulleys to replace handles on separator can be furnished at a slight charge.

## Specifications:

Horsepower—Two.

Type—Two-cycle.

Ignition—Jump spark.

Cooling—Tank.

Cylinder—Stroke, 3 inches.

Cylinder—Bore, 3 inches.

Flywheel—Diameter, 12 inches.

Flywheel—Face, 1½ inches.

Pulley—Diameter, 4 inches; face, 2½ inches.

Over All—Length, 22½ inches; width, 18½ inches; height, 34 inches.

Weight—190 pounds.

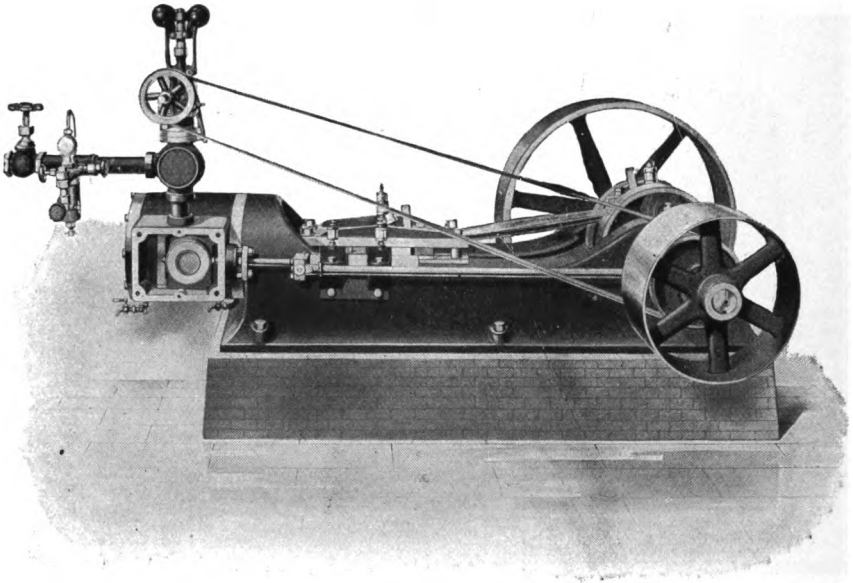
Shaft Diameter—1½ inch.

Shaft Length—18½ inches.

Price, F. O. B. factory, \$35.00. With Reducing Gear, \$37.50.

## Horizontal Center Crank Engine

"Crepaco"



Showing Balanced Valve

Is a strong, simple, plain engine.

The lower slides, the journal boxes, the center of the Cylinder, the cross-head and the crank shaft bearings are in a direct line, thus relieving the studs which hold the upper slides from all strain, and bring the thrust of the crank bearings directly on the engine bed and not on the studs. The cylinder, ways and cross-head are of the modern locomotive pattern. The piston has self-adjusting packing rings. The cylinder heads are overhanging and polished, and in connection with the iron jacket, present a surface always bright, and one that can be easily kept clean. The connecting rods and eccentric rod have adjusting brass boxes.

It has a balanced valve of our own design, and as a result of the perfect balance of this valve the friction load of the engine is reduced to a minimum, effecting a saving of fuel.

We justly claim for this Engine large wearing surfaces, durability, great rigidity and strength, extreme simplicity and few parts.

All our engines are run and tested under actual working pressure before shipping, and are known to be in perfect working order.

# Horizontal Engine

## Specifications

Rated Horse Power Code Word. ....	6 Cow	8 Cat	10. Dog	12 Elk	15 Fox
Cylinder { Bore ..... inches,	5	6	7½	7½	8
Stroke ..... inches,	7½	7½	8	9	10
Steam Pipe. .... inches,	1	1¼	1½	1½	1½
Exhaust Pipe. .... inches,	1¼	1½	2	2	2
Revolutions per Minute. ....	250	200	200	180	180
Governor Pulley { Diameter ..... inches,	5½	6½	9	9	9
Face ..... inches,	1¾	1¾	2	2	2
Fly Wheel { Diameter ..... inches,	24	24	30	30	35
Face ..... inches,	6	6	6¾	6¾	7¼
Weight ..... lbs.	170	170	180	180	350
Belt Pulley { Diameter ..... inches,	14	14	16	18	18
Face ..... inches,	6½	6½	7½	8½	8½
Weight Complete. .... lbs.	650	700	1200	1250	1600
Diameter of Shaft. .... inches,	1 ⅞	1 ⅞	2 ⅞	2 ⅞	2 ⅞
From Foundation Top to Center of Shaft. .... inches,	7¼	7¼	7¼	7¼	7¼
Floor Space. .... inches,	62x36	62x36	78x42	79x42	80x42

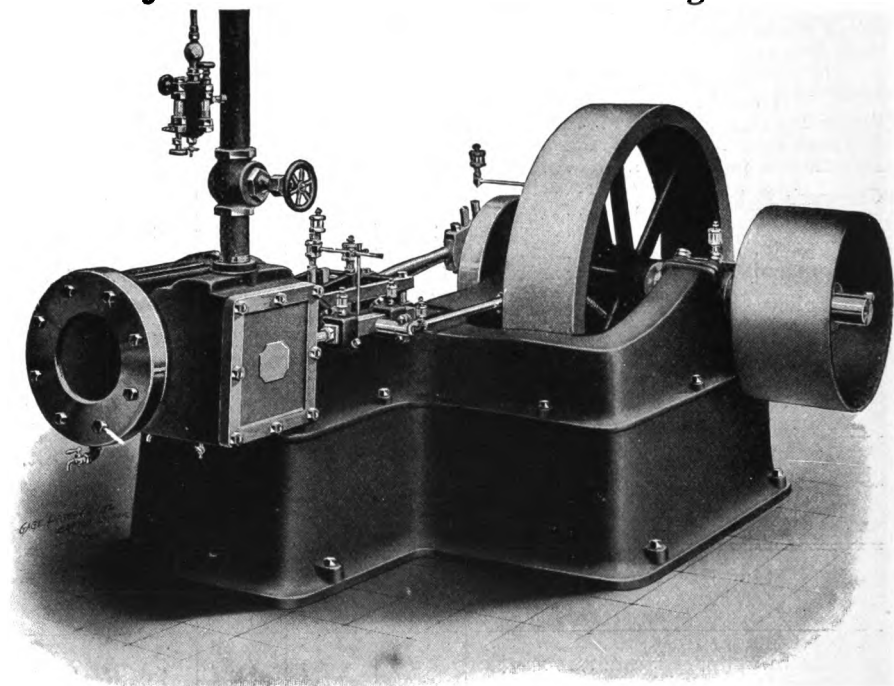
**TRIMMINGS**—The above engines include governor, governor pulley and belt, glass oilers, cylinder lubricator, throttle valve and cylinder cocks.

### Price List of Separate Parts for "Crepaco" Horizontal Center-Crank Engine

PIECE NUMBER AND NAME OF PART	Rated Horse Power				
	6	8	10	12	15
5 Top Cylinder Head. ....	\$3 20	\$3 20	\$5 20	\$5 20	\$5 20
6 Bottom Cylinder Head. ....	4 60	4 60	7 50	7 50	7 50
7 Steam Chest Cover. ....	4 00	4 00	4 00	4 00	4 00
8 Crank Shaft. ....	17 50	17 50	21 20	21 20	21 20
9 Valve. ....	3 00	3 00	5 20	5 20	5 20
10 Valve Stem. ....	2 80	2 80	4 00	4 00	4 00
11 Cross Head. ....	5 20	5 20	10 00	10 00	10 00
12 Valve Ring. ....	1 40	1 40	2 00	2 00	2 00
13 Valve Gland. ....	1 80	1 80	2 30	2 30	2 30
14 Piston Gland. ....	2 40	2 40	3 00	3 00	3 00
15 Valve Stem Yoke. ....	1 30	1 30	2 20	2 20	2 20
16 Piston Head. ....	4 80	4 80	7 50	7 50	7 50
17 Eccentric Strap. ....	4 00	4 00	4 00	4 00	4 00
18 Eccentric Block. ....	3 60	3 60	4 80	4 80	4 80
19 Box Cap. ....	1 80	1 80	3 20	3 20	3 20
20 Box Cap. ....	1 80	1 80	3 20	3 20	3 20
21 Piston Rings. .... each,	3 00	3 00	4 00	4 00	4 00
22 Cylinder Jacket. ....	80	80	1 00	1 00	1 00
23 Cylinder Jacket. ....	80	80	80	80	80
24 Connecting Rod. ....	6 00	6 00	14 50	14 50	14 50
25 Cross-Head Box. ....	6 00	6 00	7 50	7 50	7 50
26 Wrist Pin Box. ....	6 00	6 00	10 00	10 00	10 00
27 Brass Toggle. ....	3 60	3 60	4 00	4 00	4 00
28 Toggle Pin. ....	2 20	2 20	2 40	2 40	2 40
30 Eccentric Rod. ....	2 00	2 00	2 60	2 60	2 60
31 Wrist Pin Strap. ....	3 90	3 90	5 90	5 90	5 90
32 Cross-Head Strap. ....	3 90	3 90	5 50	5 50	5 50
35 Top Way. .... each,	2 60	2 60	3 50	3 50	3 50

In ordering separate parts please give name of part as well as piece number.

## "Jewel" Automatic Cut-off Engines



This engine has been used in creameries for a long time. It is considered to be one of the best engines for plants of this kind built. The present Jewel is better than ever before as it is now fitted with the Rites Automatic Governor, which keeps the engine under perfect control at all times.

### Dimensions and Powers

Based on 80 lbs. Initial Pressure, Cut-off at  $\frac{1}{2}$  Stroke.

ENGINE NUMBER	1	2	3	4	5	6
Telegraphic Cipher....	Diamond	Ruby	Emerald	Pearl	Opal	Garnet
Horse Power Rating..	6 to 8	8 to 10	10 to 12	15 to 18	20 to 25	30 to 35
Revolutions per Min...	AT 260 AT 380	AT 230 AT 320	AT 230 AT 300	AT 220 AT 280	AT 220 AT 260	AT 220 AT 260
Cylinder { Bore.....	4½ in.	5 in.	6 in.	7½ in.	8 in.	9½ in.
{ Stroke....	6 in.	7½ in.	7½ in.	8 in.	10 in.	10 in.
Steam Pipe.....	1½ in.	1½ in.	1½ in.	2 in.	2 in.	2 in.
Exhaust Pipe.....	1½ in.	1½ in.	2 in.	2½ in.	2½ in.	2½ in.
{ Diameter.	20 in.	30 in.	30 in.	35 in.	42 in.	42 in.
Fly Wheel { Face.....	5½ in.	6½ in.	6½ in.	7½ in.	8½ in.	8½ in.
{ Weight....	135 lbs.	200 lbs.	340 lbs.	435 lbs.	660 lbs.	660 lbs.
Belt Pulley { Diameter	14 in.	16 in.	18 in.	20 in.	20 in.	24 in.
{ Face.....	6½ in.	7½ in.	8½ in.	10½ in.	12 in.	12 in.
Diameter of Shalt....	1½ in.	2½ in.	2½ in.	2½ in.	3½ in.	3½ in.
Floor Space.....	52x36	64x38	64x38	69½x46½	73x54	73x54
Weight complete....	700 lbs.	1050 lbs.	1275 lbs.	1850 lbs.	3150 lbs.	3300 lbs.

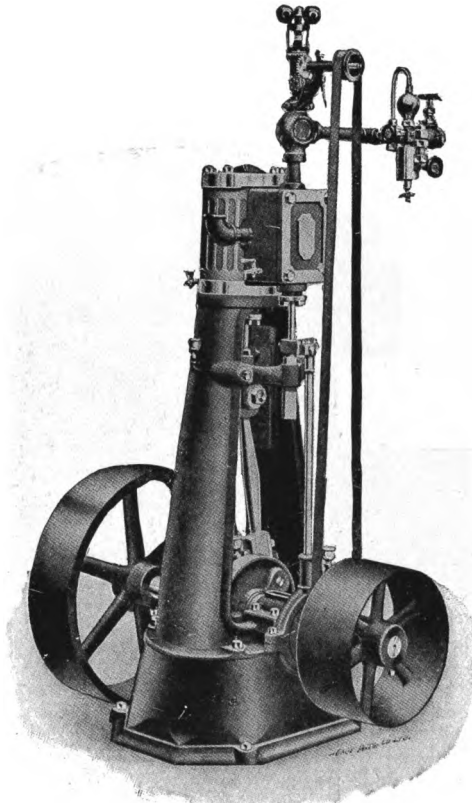
Trimmings.—We ship with each engine a complete set of glass oilers, one sight-feed lubricator, one throttle valve and two cylinder cocks.

Speed.—We have found that the best results can be obtained between the limits of speed specified in the above list, although a greater or less number of revolutions may be used if desired.

The governor will be adjusted to the higher number of revolutions unless the speed desired is specified in the order.

**WRITE FOR ESTIMATES.**

# Upright Engines



## Dimensions

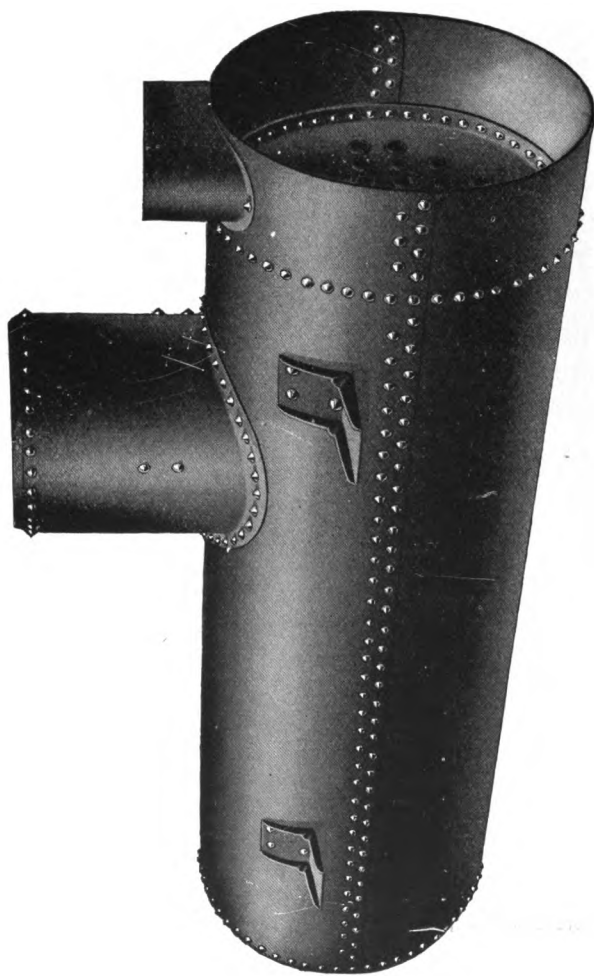
RATED HORSE POWER	1	2	4	6	8	10	12	15
Telegraphic Cipher. . .	Celery	Carrot	Parsnip	Cabbage	Squash	Lettuce	Beans	Peas
Cylinder {Bore.....	2½	3	4	5	6	7½	7½	7½
{Stroke....	3	5	5	7½	7½	8	9	10
Steam Pipe. ....	¾	¾	¾	1	1½	1½	1½	1½
Exhaust Pipe. ....	¾	¾	1	1½	1½	2	2	2
Revolutions per Min.	400	350	300	250	200	200	180	180
Belt Pulley {Dia. . .	6	10	12	14	14	16	18	18
{Face. . .	3½	4½	5	6½	6½	7½	8½	8½
Governor Pulley {Dia. .	3	4	4½	5½	6½	9	9	9
{Face. . .	1½	1½	1½	1½	2	2	2	2
Floor Space, inches. . .	14x26	18x20	18x20	20x22	20x22	22x24	22x24	22x24
Height to top of Cyl. . .	30 in.	3 ft. 6 in.	3 ft. 6 in.	4 ft. 8 in.	4 ft. 10 in.	5 ft. 2 in.	5 ft. 2 in.	5 ft. 2 in.
Weight. . . . .	170	275	425	700	850	1250	1400	1500
Balance Wheel {Diam. .	13	15	17	24	24	30	30	35
{Face. . .	3½	4	4½	6	6	6½	6½	7½
{Weight	35	45	65	170	170	180	180	350
Diameter of Shaft. . . .	1½	1½	1½	1 15-16	1 15-16	2½	2½	2½

**TRIMMINGS.**—The above engines include governor, governor pulley and belt, throttle valve, oil cups, cylinder lubricator, belt wheel, balance wheel and air cock.

Upright Boilers and Engines furnished on combination base without extra charge.

**WRITE FOR ESTIMATES.**

## Stationary Tubular Steel Boilers



**Horizontal Stationary Tubular Boiler**

These Boilers are made of flange steel, 60,000 lbs. tensile strength, and the tubes are full weight, lap-welded, of the best American manufacture. High grade standard fittings and trimmings. Furnished in either full or half arch front.



# Specifications of Horizontal Stationary Tubular Boilers

Code	Horse Power	Size of Boiler	Heating Surface, Square Feet	Number of 3-Inch Tubes	Thickness of Shell, Inches	Thickness of Head, Inches	Size of Dome, Inches	Grate Surface, Inches	Length of Stack, Feet	Diameter of Stack, Inches	Size of Safety Valve	Size of Feed Pipe, Inches	Size of Blow-Off Pipe, Inches	Weight Complete, Pounds, About	Weight of Bare Boiler, Pounds
Fable.....	8	30x 5	126	20	1/4	5-16	16x16	30x30	24	14	1	1	1	2800	1200
Face.....	10	30x 7	150	20	1/4	5-16	16x18	34x30	24	14	1	1	1	3250	1500
Fade.....	12	30x 8	180	20	1/4	5-16	16x18	34x30	24	14	1 1/4	1	1	3600	1750
Fail.....	15	36x 8	226	26	1/4	3/8	22x20	36x36	24	16	1 1/4	1 1/4	1 1/4	4000	2100
Fair.....	20	36x10	300	28	1/4	3/8	22x20	42x36	24	16	1 1/2	1 1/4	1 1/4	4750	2600
Fall.....	25	36x12	375	30	9-32	3/8	22x22	42x42	35	20	2	1 1/4	1 1/4	6050	3200
Farm.....	30	42x10	446	40	5-16	3/8	24x24	42x44	35	22	2	1 1/2	1 1/2	7000	3650
Fast.....	35	44x10	530	44	5-16	3/8	24x24	48x44	40	22	2	1 1/2	1 1/2	7250	4150
Fawn.....	40	44x12	600	44	5-16	3/8	24x24	48x48	40	24	2 1/2	1 1/2	1 1/2	9200	4800
Fern.....	45	48x12	675	48	5-16	3/8	28x28	54x48	40	24	3	1 1/2	1 1/2	10150	5500
Fist.....	50	48x14	760	50	7-16	7-16	30x30	54x48	40	26	3	1 1/2	1 1/2	10900	6500
Fife.....	60	54x14	900	48-3 1/2	5-16	7-16	36x32	54x60	40	28	4	1 1/2	1 1/2	12000	7500
File.....	70	54x16	1050	48-3 1/2	5-16	7-16	36x32	54x60	50	28	4	1 1/2	1 1/2	13600	8600
Fish.....	80	60x16	1200	46-4	5-16	7-16	36x32	54x60	60	28	4	2	2	15100	10660

**BOILER FIXTURES**—Full or half front with liners for fire brick, grates, grate bearers, supporting bars for turning arch at rear end of boiler, ash door and frame. Smoke stack, including guy wire four times length of stack.

**BOILER FITTINGS**—Injector fitted with pipe, safety valve, steam gauge, glass water gauge fitted with water column, gauge cocks, blow-off, check and stop valves.

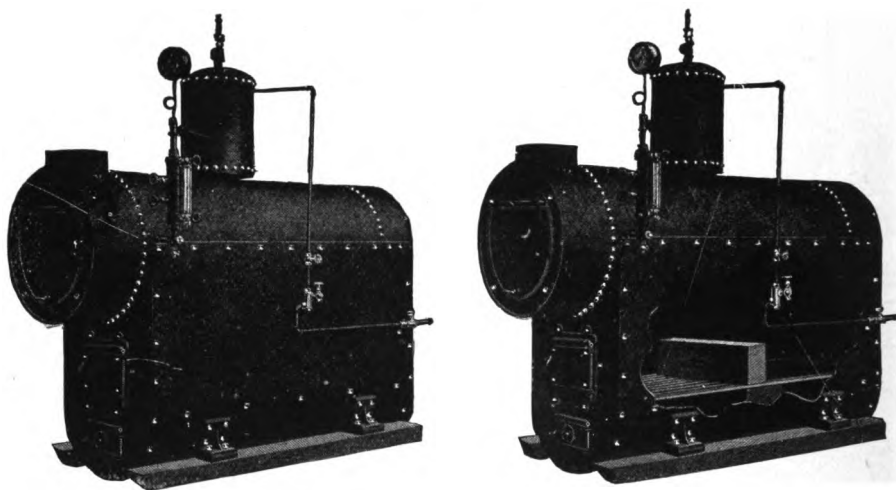
The 25-, 40- and 45-horse power boilers are constructed with flush ends. All other sizes are made with smoke box extension, as shown in cut. Suitable manhole in all boilers above 20 h. p.

Buckstays and cross rods, wall plates and rollers are furnished only when specified and are charged for extra.

All boilers tested to 150 pounds hydrostatic pressure before leaving the shop.

Setting plans and specifications for any size boiler will be furnished upon application.

## Ideal Economist Boiler



This Boiler is well adapted to work requiring moderate power in a small compass. It is also designed for all places where a Boiler of a semi-portable nature is required or where brick is scarce and masonry work expensive.

It is a Horizontal Return Tubular Boiler set in a wrought iron casing. This casing is protected from the fire by a fire-brick lining. The fire is built under the Boiler, the heat passing along the bottom of the Boiler and returning through the tubes to the smoke box in front. The bridge wall is adjustable to different lengths of fuel. The price is low. It is safe, durable, easy cleaned and a rapid, economical steamer.

Largely used in Creameries, Grain Elevators, Brick Yards, Cotton Mills and small manufacturing plants generally.

### Specifications of Economist Boiler

Furnished with or without Detachable Dome.

Telegraphic Cipher	Cloth	Wool-en	Linen	Cam-bric	Ging-ham	Calico	Cotton	Muslin	Velvet
Horse Power Rating. . . . .	4	5	6	7	8	10	12	15	20
Diameter of shell, inches. . . .	26	26	26	30	30	30	30	36	36
Length of tubes, feet. . . . .	3	4	5	5	6	7	8	7	9
No. of 3-inch tubes. . . . .	15	15	15	22	22	22	22	28	28
Thickness of shell, inches. . . .	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
Thickness of heads. . . . .	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$
Length grates, inches. . . . .	24	24	24	24	30	30	30	36	36
Width grates, inches. . . . .	20	20	20	24	24	24	24	29	29
Size pop safety valve, inches. . .	$\frac{3}{4}$	$\frac{3}{4}$	1	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2
Size blow-off valve, inches. . .	$\frac{3}{4}$	$\frac{3}{4}$	1	1	1	1	1	1 $\frac{1}{2}$	1 $\frac{1}{2}$
No. of fire-brick or tile lining. .	10	12	14	14	16	18	20	20	24
Size of fire-brick or tile lining. .	12x22	12x22	12x22	12x24	12x24	12x24	12x24	12x24	12x24
Weight of fire-brick or tile lining. . . . .	500	600	700	800	900	1025	1150	1100	1350
Length of stack, feet. . . . .	20	20	20	24	24	24	24	24	24
Diameter of stack, inches. . . .	12	12	12	14	14	14	14	16	16
Approximate weight, complete. .	2000	2550	2875	3200	3700	4000	4500	5900	6800

### With These Boilers the Following Fixtures and Fittings Are Furnished:

Smoke box extension, door and stack saddle, grate bars, bearing bars, bridge wall, fire-brick lining, pop safety valve, steam gauge and syphon, water column with glass water gauge, 2 gauge cocks; feed, check and blow-off valves; injector fitted to boiler, smoke stack and guys four times length of stack. Detachable domes enable convenient loading in box cars, as well as economy in freight charges.

PRICES NAMED ON APPLICATION.

# Plain Vertical Boilers

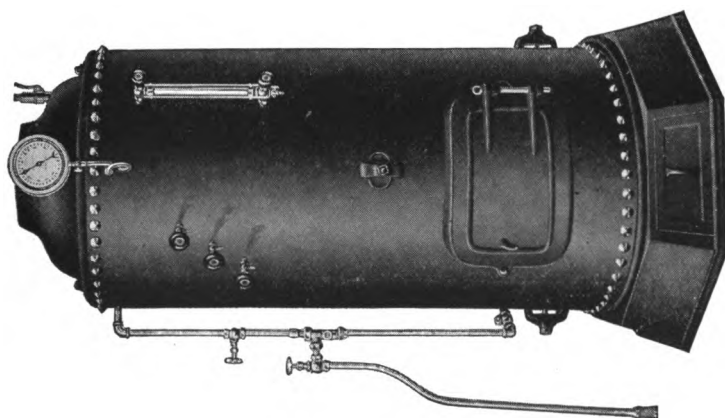
## Specifications

HORSE POWER. Telegraphic Cipher.....	1½	2	3	4	5	6	8	10	12	14	16
	Red	Green	Yellow	Blue	Indigo	Violet	White	Black	Orange	Maroon	Purple
Diameter of Boiler, in inches.....	20	20	20	24	24	26	30	30	36	36	36
Height above base in inches.....	36	43	49	50	60	60	60	72	72	84	96
Diameter of furnace, in inches.....	16	16	16	21	21	22	25	25	30	30	30
Height of fur- nace in inches.....	18	18	18	20	20	22	24	24	24	28	32
Thickness of steel in shell.....	3-16	¼	¼	¼	¼	¼	¼	¼	¼	¼	¼
Thickness of steel in heads.....	¼	5-16	5-16	5-16	5-16	5-16	5-16	¾	¾	¾	¾
Thickness of steel in fire box.....	¼	¼	¼	¼	¼	¼	¼	¼	5-16	5-16	5-16
Length of tubes, in inches.....	18	25	31	30	40	38	36	48	48	56	64
Number of 2- in tubes.....	16	19	19	31	31	37	43	43	55	55	55
Weight with- out trimmings.....	325	430	530	640	750	840	1010	1180	1520	1800	2280
Weight of boiler com- plete.....	475	560	620	890	1060	1300	1550	1650	2350	2540	3000
Outside dia- meter of stack opening, in inches.....	8½	8½	8½	10	10	11	12½	12½	16	16	16
Height from floor to top of hood, in inches.....	50	54	60	66	76	76	76	94	98	108	120

**CAST FIXTURES.**—Base, hood, fire door and grates.

**TRIMMINGS.**—Injector fitted with pipe and valves, steam gauge, water gauge, gauge cocks, safety valve and blow-off.

All Boilers above 26 inches in diameter have vertical seams, double riveted. They are made of flange steel 60,000 lbs. T. S., and are tested to 150 lbs. hydrostatic pressure.



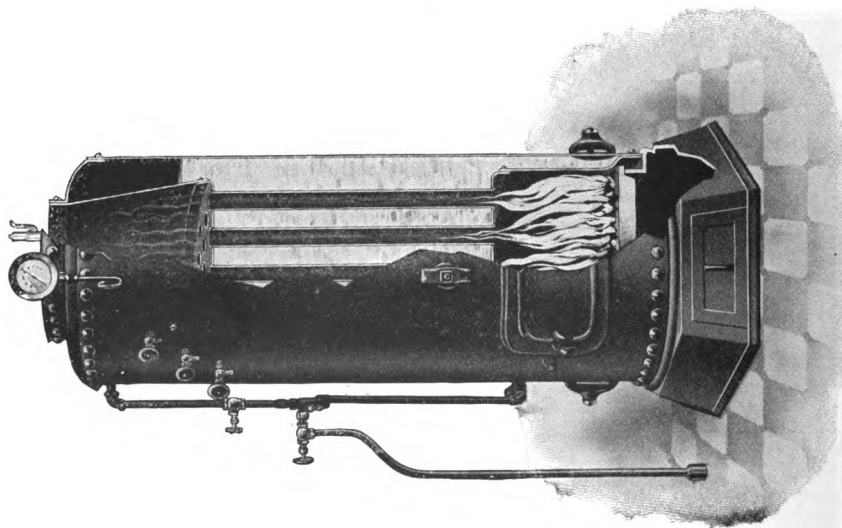
# Submerged Flue Tubular Boilers

## Specifications

Horse Power	Diameter in Inches	Height in Inches	Height of Fire Box	Number of Tubes	Diameter of Tubes in Inches	Length of Tubes in Inches	Thickness of Shell	Thickness of Fire Box	Thickness of Heads	Thickness of Cone	Size of Safety Valve, in Inches	Size of Blow-off in Inches	Diameter of Stack Opening in Inches	Weight of Boiler Without Fixtures	Weight of Boiler Complete
5	24	60	24	31	2	18	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	1	1	$11\frac{1}{2}$	700	1200
8	30	60	27	54	2	19	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$1\frac{1}{4}$	1	$11\frac{1}{2}$	1075	1500
10	30	72	28	54	2	27	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$1\frac{1}{4}$	1	$15\frac{1}{2}$	1250	1700
12	30	84	28	54	2	38	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$1\frac{1}{2}$	1	$15\frac{1}{2}$	1450	1900
15	36	84	30	70	2	38	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$1\frac{1}{2}$	1	18	1930	2700

This type of Boiler made throughout of 60,000 lbs. tensile strength homogeneous steel, and is so constructed that the water line is above the tubes, the tops of the tubes instead of being above the water are submerged, thus removing any tendency to burn them by over heating.

**FIXTURES** for the above include grates and doors, fitted with steam gauge, water gauge, gauge cocks, safety valve and blow off valve and injector.



# The Eureka Boiler or Steam Feed Cooker

Made from boiler steel with regular boiler tubes; durable, rigid and strong in all its parts; and, being well riveted and calked, will last, with ordinary care, a lifetime. While we test these boilers at 100 lbs. hydraulic pressure, they are intended for use only where low pressure is required. The No. 3 Boiler has water leg, is tested to 150 lbs. pressure and will develop  $1\frac{1}{2}$  horse power.

These boilers are provided with grates, which adapt them to the burning of all kinds of fuel, such as coal, wood, corn cobs, etc.

The Eureka Boiler can be used for heating water for a variety of purposes, for steaming casks and milk cans, steaming wood for bending, heating cheese vats, steaming wheat, etc.

Size No.	Diam of Shell	Height of Shell	No. of 2-in. Flues	Length of boiler over all	Shipping Weight	Capacity
1	19 ins.	40 ins.	9	54 ins.	350 lbs.	21 gal
2	19 ins.	44 ins.	13	58 ins.	400 lbs.	25 gal
3	19 ins.	44 ins.	13	58 ins.	450 lbs.	30 gal

The trimmings include two-gauge cocks, blow-off valve, pump for supplying the boiler with water, safety valve, 2 ft. 6 in. suction hose, 3-ft. steam pipe with valve to convey steam to barrel for cooking feed or boiling water. Prices on application.

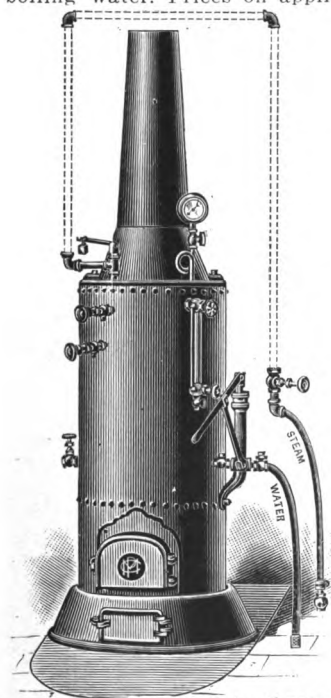


Extras—Steam gauge and water column.

## The Ideal Steamer

consists of the Eureka Boiler, with additional equipment for milk room as follows. We have sold thousands of these outfits. The list has been carefully selected and experience has shown that in 99 per cent of the cases the equipment is just what is wanted, and the purchaser is saved the trouble of selecting and ordering the extras.

- One 5-inch Steam Gauge, with  $\frac{1}{4}$ -inch Siphon and Cock.
- One  $\frac{3}{4}$ -inch Brass Water Column, with Glass Rods and Dry Cocks.
- One  $1\frac{1}{4}$ -inch Penberthy Water Muffler and Heater.
- One  $\frac{1}{2}$ -in. Jenkins Bros. Globe Valve for Steam.
- Four ft.  $\frac{3}{4}$ -in. 3-ply best grade Steam Hose.
- Two  $\frac{3}{4}$ -inch Hose Clamps.
- One  $\frac{1}{2}$ x6 inch Nipple.
- One  $\frac{1}{2}$ x2-inch Nipple.
- Three  $\frac{1}{2}$ x3-inch Nipples for connections.
- One  $\frac{3}{8}$ x3-inch Nipple for blow-off valve.
- Four  $\frac{1}{2}$ -inch Elbows for connections.
- One  $\frac{1}{2}$ -inch T.
- One iron Extension Hood, tapered to 6 inches.
- One Sheet Iron Base Plate.



Furnished in three sizes corresponding with Eureka boilers.  
Prices on Application.

# Combined "Little Giant" Engine and Boiler

Made in one size engine and one size boiler only.

This outfit is complete in every detail, and can be furnished on combined or independent bases, as desired. For specifications and description see tables below.

In this outfit the engine stands on the left-hand side of the boiler as you face the fire door. Be sure to state whether you want separate or combined base.



## Description of "Little Giant" Engine. One Horse Power.

It is unique in design throughout, compact, and a model of simplicity, and is especially adapted for use in running cream separators.

When run at 400 revolutions per minute, will develop its full rated horse power. With each engine we furnish governor, governor pulley and belt, oil cups, throttle valve, cylinder lubricator, belt and balance wheel, complete.

## Specifications of "Little Giant" Engines.

Cylinder..	{ Bore in inches..... 2	Governor, inch..... ¾
	{ Stroke, in inches..... 3	Exhaust, inch..... ½
Revolutions per minute.....	400	Floor space, in inches..... 14x26
Belt	{ Diameter, in inches... 6	Height to top of cylinder, in inches... 30
Pulley...	{ Face, in inches..... 3 ¾	Weight, complete in lbs..... 170
	{ Diameter in inches... 13	
Fly Wheel	{ Face, in inches..... 3 ½	
	{ Weight, in lbs..... 35	

Write for Prices.

## Description "Little Giant" Boiler.

One and a half Horse Power.

This boiler is complete in every detail, and is extensively used where light power is needed. It is made of the best quality of steel and tested 150 pounds pressure before leaving the works.

## Specifications of "Little Giant" Boilers.

Horse Power .....	1 ½	Numbers of 2-inch tubes.....	16
Diameter of boiler, in inches.....	20	Weight of boiler without trim-	
Height above base, in inches.....	36	mings or fixtures .....	325
Height of furnace, in inches.....	18	Floor space, diameter, in inches... 30	
Diameter of furnace, in inches.....	16	Weight of boiler, complete.....	475
Thickness of steel in shell.....	3-16	Outside diameter of stack opening,	
Thickness of steel in heads.....	¼	in inches.....	8 ½
Thickness of steel in fire box.....	¼	Height from floor to top of hood..	4 ft. 2 in.
Length of tubes, in inches.....	18		

## Castings and Trimmings.

Hood, door and frame, grates, base, injector or feed pump, steam gauge, water gauge, two gauge cocks, safety and blow-off valves.

Write for Prices.

## Smoke Stacks and Guy Wire

Diameter in Inches	No. 16 Steel, per Foot	No. 14 Steel, per Foot	No. 12 Steel, per Foot	No. 10 Steel, per Foot
8	\$1.04	\$1.44	.....	....
10	1.12	1.52	\$1.84	....
12	1.20	1.60	2.08	\$2.64
14	1.28	1.76	2.24	2.88
16	1.36	1.84	2.32	3.04
18	1.44	2.00	2.48	3.20
20	1.52	2.16	2.64	3.44
22	1.60	2.32	2.80	3.68
24	1.92	2.48	2.96	3.82
26	2.08	2.72	3.12	4.16

Above list is subject to discount.

For Elbow in stack, add cost of 8 feet of stack.

For Damper in stack, add cost of 3 feet of stack.

Guy Wire for 10 to 14 in. stacks, 1½ cts. per foot.

Guy Wire for 14 to 20 in. stacks, 1¾ cts. per foot.

Guy Wire for 20 to 26 in. stacks, 2 cts. per foot.

### Stack Plates

For 30 inch Boiler.....	each, \$4.00
For 36 inch Boiler.....	each, 5.00
For 42 and 44 inch Boiler.....	each, 6.00
For 48 to 60 inch Boiler.....	each, 7.00

### Fire Brick

Best quality, small lots, per 1,000.....	
Best quality, 500 to 1,000, per 1,000.....	

### Fire Clay

Best quality, per barrel.....	
Best quality, per ½ barrel.....	
Best quality, per bushel.....	

See Price Current for prices.

### Grate Bars

We carry in stock bars for horizontal boilers 30, 36, 37, 42 and 48 inches long, also round grates for vertical or upright boilers. Our grates are made from best gray iron and should not be compared with those made of scrap and sold at lower prices. All sizes furnished to order promptly. In ordering give length and width of firebox for horizontal boilers and diameter of firebox for vertical boilers using round grates. Also whether for burning wood or coal.

Price .....per lb.

See Price Current for prices.

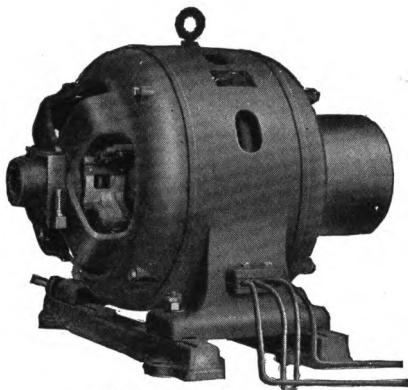
### Boiler Compound

#### "Phospho"

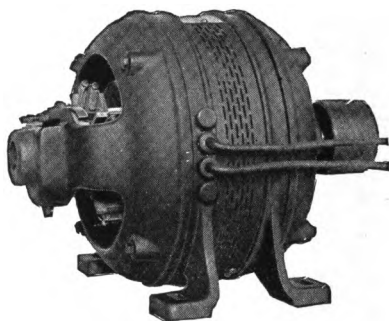
This is a chemical water purifier for the prevention or removal of boiler scale, guaranteed to produce no injurious effect on milk with which steam is brought in direct contact. This preparation is in successful use in a large number of the best creameries.

5 to 10 H. P. boiler, 25 lb. package.....	\$3.75
15 to 25 H. P. boiler, 50 lb. package.....	6.00
10 lb. package .....	2.00

## Electric Motors



Illustrating 1 to 20 H. P.



Illustrating 1/4 to 1 H. P.

### Wagner Single Phase Motors

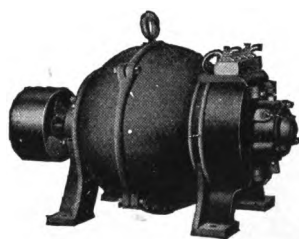
For Alternating Current, 110 or 220-Volt.

Horse Power	Speed	Pulley		Shipping Weight
		Standard Diameter	Face	
1/4	1750	3	2	75
1/4	1165	3	2	100
1-3	1165	3	3	110
1/2	1750	3	2	100
1/2	1165	3	3	140
3/4	1750	3	3	110
1	1750	3	3	140
1	1165	3 1/2	3	150
2	1750	3 1/2	3	275
2	1165	3 1/2	3	305
2	870	4	4	500
3	1750	3 1/2	3	275
3	1165	4	4	450
3 1/2	1165	4	4	500
3 1/2	870	5	4 1/2	730
4	1750	4	4	450
5	1750	4	4	500
5	1165	5	4 1/2	730
7 1/2	1750	5	4 1/2	730
7 1/2	1165	6	5	730
10	1750	6	5	730
10	1165	7	6	940
15	1750	7	6	940
15	1165	8	6	940
20	1750	8	6	940
20	1165	9	8	1370

Prices quoted on application. All sizes include standard pulleys. Sizes over 1 H. P. also include slide rails. In ordering, always give phase, frequency and voltage. For two or three-phase alternating current and direct current, see next page.



# Electric Motors



**Sprague G. E. Motors**  
For Direct Current 115-230 Volts

H. P.	Speed.	Standard Pulley. Diam. In.	Face, In.	Ship. Wght. Lbs.	H. P.	Speed.	Standard Pulley. Diam. In.	Face, In.	Ship. Wght. Lbs.
1/4	1500	2 1/2	2	98	3	1750	4 1/2	3 1/2	375
1/4	650	3	2 1/2	145	3	1150	5	4	450
1/2	1950	2 1/2	2	98	4	1470	5	4	450
1/2	1350	3	2 1/2	145	4	1150	5	4	625
3/4	2000	3	2 1/2	145	5	1550	5	4	625
3/4	1300	3	2 1/2	150	5	1100	5 1/2	5	685
3/4	850	4	3 1/4	220	7 1/2	1050	7	6	890
1	1200	4	3 1/4	220	10	825	10	7 3/4	1236
1	600	4 1/2	3 1/2	375	10	525	11	9 3/4	1660
1 1/2	1575	4	3 1/4	360	15	1250	10	7 3/4	1236
2	1150	4 1/2	3 1/2	375	15	700	11	9 3/4	1660
2	700	5	4	450	20	750	12	8	1715

Prices on application. Larger size motors and motors for 500 volt direct current furnished. Pulleys above are standard, but other sizes can be furnished when necessary to get proper speed.

## Sprague G. E. Polyphase Motors

60 Cycle Alternating Current

H. P.	Speed.	Standard Pulley. Diam. In.	Face, In.	Ship. Wght. Lbs.	H. P.	Speed.	Standard Pulley. Diam. In.	Face, In.	Ship. Wght. Lbs.
1/4	1200	3 1/2	2 1/2	70	5	1800	4 1/2	4 1/2	250
1/2	1800	3 1/2	2 1/2	70	5	1200	5 1/2	4 1/2	420
1/2	1200	3 1/2	2 1/2	80	7 1/2	1800	5 1/2	4 1/2	520
3/4	1800	3 1/2	2 1/2	80	7 1/2	1200	8	5	625
3/4	1200	4 1/2	2 1/2	100	10	1800	8	5	550
1	1800	3 1/2	2 1/2	100	10	1200	8	4 1/2	795
1	1200	4 1/2	2 1/2	127	10	900	10	6	215
1 1/2	1800	4 1/2	2 1/2	130	15	1800	8	5	640
1 1/2	1200	4 1/2	2 1/2	150	15	1200	10	6	850
2	1800	4 1/2	2 1/2	150	15	900	10	7	1170
2	1200	4 1/2	3 1/2	190	20	1200	10	7	1420
3	1800	4 1/2	3 1/2	190	20	900	10	8	1500
3	1200	4 1/2	4 1/2	250					

Prices on application. In making inquiry, give voltage, cycle and phase of current, also size of pulley required if standard pulley will not give proper speed.

## Injectors



### The "Metropolitan" Automatic

Size	Size of Pipe Connections			Capacity with Steam Pres. 80lbs 2-foot Lift	Horse Power	Price
	St'm	Suc.	Del.			
2	1/2"	1/2"	1/2"	60 gals.	4 to 6	\$15 00
3	3/4"	3/4"	3/4"	80 "	6 to 8	16 00
3 1/2	1"	1"	1"	120 "	8 to 15	18 00
4	1 1/4"	1 1/4"	1 1/4"	165 "	15 to 20	20 00
5	1 3/4"	1 3/4"	1 3/4"	250 "	20 to 30	25 00
6	2"	2"	2"	350 "	30 to 45	30 00

### Penberthy

Number	Size of pipe connections	Gallons per hour, 65 lb. pressure	Horse power	Price
OO .....	1/2"	60	4 to 8	\$16 00
A .....	3/4"	85	8 to 16	18 00
AA .....	1"	120	12 to 22	20 00
B .....	1 1/4"	220	17 to 32	25 00
BB .....	1 3/4"	300	20 to 45	30 00
C .....	2"	430	40 to 65	40 00
CC .....	2 1/2"	575	45 to 80	45 00
D .....	3"	750	50 to 100	55 00



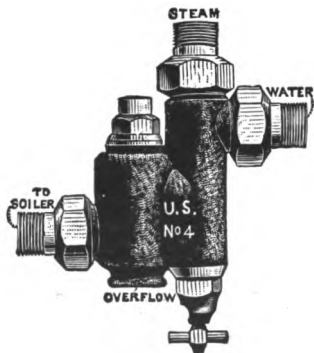
Style D Penberthy Connection

### U. S. Automatic Injector

#### Efficiency 100 Per Cent

In regard to the economy of the U. S. Injector, that instrument shows an efficiency of 100 per cent, is ideally perfect, because no steam is wasted and all the heat, not employed in the thermodynamic operation of forcing water into the boiler, is saved by being returned to the boiler from which it issued.

Great Saving of Labor, Fuel, Water and Annoyance.

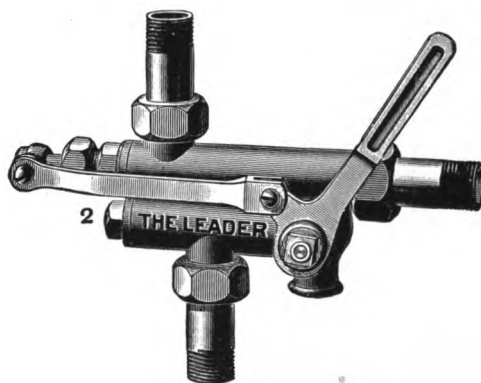


U. S. Injector

E	All Pipe Connect'ns	Capacity Gallons Per Hour.		Horse Power.	Price.
		Max.	Min.		
00	1 in.	36	20	1 to 3	\$13 00
0	1 1/4"	65	35	3 " 6	14 00
1	1 1/2"	90	55	4 " 8	16 00
2	1 3/4"	125	65	8 " 16	18 00
3	2"	170	100	12 " 22	20 00
4	2 1/4"	250	140	17 " 32	25 00
5	2 1/2"	340	170	20 " 45	30 00
6	3"	475	300	40 " 65	40 00
7	3 1/2"	575	350	45 " 80	45 00
8	4"	750	425	50 " 100	55 00

## Injectors

### "Leader" and "Excelsior"



Price List for Either of the Above Injectors

No. of Injector	Size of Pipes		Horse Power of Boiler, Will Feed	Gallons per Hour, 60 lbs. Steam	List Price
	Steam Pipe	Suction and Feed			
1	1/2"	1/2"	3 to 7	60	\$16 00
2	3/4"	3/4"	7 to 10	90	18 00
3	1"	1"	12 to 18	150	22 00
4	1 1/4"	1 1/4"	18 to 25	220	25 00
5	1 1/2"	1 1/2"	25 to 35	300	30 00
6	2"	2"	35 to 45	400	35 00
7	2 1/2"	2 1/2"	45 to 60	500	40 00

We furnish repairs for all kinds of Injectors and Inspirators.

## Ejectors

The "X-L"

Lifts Water 20 to 25 Feet; Elevates 30 to 70 Feet



No.	Size, Brass	Steam Connection	Suction and Delivery	Capacity Per Hour, 65 Lbs. Steam	Price, Each	Price, Strainers, Each
No. 1	1/2"	1/2"	1/2"	250 Gal.	\$ 8 00	\$0 50
No. 2	3/4"	3/4"	3/4"	500 Gal.	10 00	75
No. 3	1"	1"	1"	960 Gal.	15 00	1 00
No. 4	1 1/4"	1 1/4"	1 1/4"	1300 Gal.	20 00	1 25
No. 5	1 1/2"	1 1/2"	1 1/2"	2000 Gal.	25 00	1 50

## The "H-D"

Sizes, Brass	Pipe Con'ec'ns		Capacity per Hour	Prices Each	Price Strainers Each
	Steam	Suction and Delivery			
No. 1	1/2"	1/2"	250 gals.	\$ 8 00	\$0 80
No. 2	3/4"	3/4"	500 gals.	10 00	1 00
No. 3	1"	1"	960 gals.	15 00	1 25
No. 4	1 1/4"	1 1/4"	1300 gals.	20 00	1 50



## Jet Pumps

### The "Blakeslee"

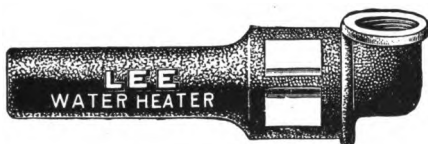
Designed for pumping water, buttermilk and other liquids.  
Prices of Pumps with Brass Fittings.

Size of Pump	Suction Pipe	Disch'ge Pipe	Steam Pipe	Capacity per min.	Price
$\frac{3}{4}$ inch.....	$\frac{1}{2}$ inch	$\frac{1}{2}$ inch	$\frac{3}{8}$ inch	8 galls.	\$ 8 00
1 ".....	$\frac{1}{2}$ "	$\frac{3}{4}$ "	$\frac{1}{2}$ "	15 "	10 00
$1\frac{1}{4}$ ".....	$\frac{1}{2}$ "	1 "	$\frac{1}{2}$ "	20 "	12 00
$1\frac{1}{2}$ ".....	$\frac{1}{2}$ "	$1\frac{1}{4}$ "	$\frac{3}{4}$ "	30 "	14 00

Brass pumps will be furnished at an additional cost of 25 per cent.



## Noiseless Water Heaters



The Lee Noiseless Heater or Hot Water Nozzle

Made in five sizes for  $\frac{3}{8}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , 1 and  $1\frac{1}{4}$  inch steam pipe.

Cut No. 300

Prices

No. 1, Size $\frac{3}{8}$ in. Steam Pipe.....	each, \$1.75
No. 2, Size $\frac{1}{2}$ in. Steam Pipe.....	each, 2.25
No. 3, Size $\frac{3}{4}$ in. Steam Pipe.....	each, 3.00
No. 4, Size 1 in. Steam Pipe.....	each, 4.00
No. 5, Size $1\frac{1}{4}$ in. Steam Pipe.....	each, 6.00

## The Penberthy

Made in three sizes for  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1 inch pipe.  
Size H,  $\frac{1}{2}$  inch, will heat 50 gallons of water at summer heat to 210 degrees in 20 minutes with 70 lbs. of steam.  
Size J,  $\frac{3}{4}$  inch, will heat 50 gallons of water to same temperature in 15 minutes with 70 lbs. of steam.

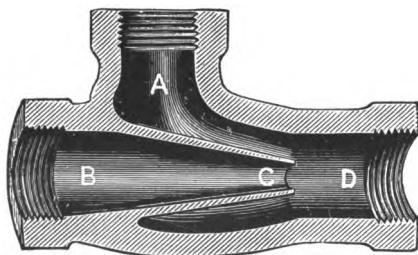
Size K, 1 inch, will heat 50 gallons of water to same temperature in 12 minutes with 70 lbs. of steam.

List size H, $\frac{1}{2}$ inch.....	each, \$2.00
List size J, $\frac{3}{4}$ inch.....	each, 2.50
List size K, 1 inch.....	each, 3.00



## The McDaniel's

Will run hot or cold water. Every creamery should have one.

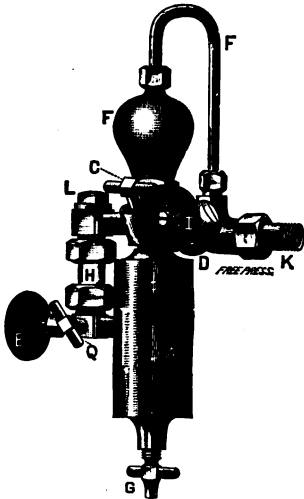


1 inch black.....	\$1.00
$1\frac{1}{4}$ inch black.....	1.25
$1\frac{1}{2}$ inch black.....	1.50
2 inch black.....	2.00

Galvanized, extra, each, 25 cents.

Prices on this page subject to discount.

# The "Detroit" Improved Standard Lubricator For Stationary Engines



Single Connection

This Lubricator is intended especially for the better classes of engines, and represents the very highest development in its line. It is the most convenient, most durable and most reliable sight-feed lubricator made.

## Among the Improvements it possesses are the following:

1. The support arm is in two parts. The part containing the globe valve is first screwed into the steam pipe, and the lubricator is then coupled to it. This makes the attachment very easy, and, on account of the globe valve, the lubricator proper can be removed at any time, for repairs or otherwise, without letting down steam.
2. The heating passage from the upper sight-feed arm for the support arm passes directly through the body of the lubricator, and, being always filled with steam, it keeps the oil constantly warm and in a thoroughly liquid condition. This lubricator is particularly well adapted for feeding heavy oils.
3. There is a drain stem under the sight-feed glass, which allows the water to be drained out and the glass cleaned at any time.
4. The oil is poured directly into the body in the pint and larger sizes, doing away with the necessity of a vent.
5. The sight-feed and gauge glasses are inserted through the upper arms.
6. The sight-feed glass and the valve regulating the feed are on the opposite side from the steam pipe.

## Sizes and Prices With Double Connection

Size	Plain Brass	Nickel Plated	Suitable for engine with diam. of c. linder as follows
One-third pint.....	\$17 00	\$20 00	Up to 18 inches
Half-pint.....	22 00	25 00	8 to 10 "
Pint.....	30 00	35 00	10 to 18 "
Quart.....	45 00	50 00	18 to 30 "
Half Gallon.....	60 00	65 00	30 and over
Gallon.....	75 00	80 00	

## With Single Connection

Size	Plain Brass	Nickel Plated	Suitable for engine with diam. of cylinder as follows
One-fourth pint.....	\$15 00	\$18 00	Up to 6 inches
One-third pint.....	17 00	20 00	6 to 8 "
One Half pint.....	20 00	23 00	8 to 10 "

## Lubricator Glasses

We carry in stock  $\frac{1}{2}$  and  $\frac{3}{4}$  glass tubing. As glasses vary in size and length, according to style and size, it will be necessary to give exact outside diameter and length when ordering. Gaskets always sent with glasses.

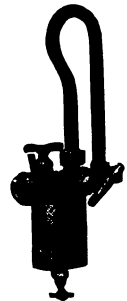
Price, each, with gaskets .....\$0.20

## Swift Lubricator

### Class G. Single or Double Connection

This style of Lubricator was first placed upon the market in answer to the request of many builders of portable and traction engines, steam pumps, etc., who desire a sight-feed cup that shall be low in price and at the same time reliable in its action.

Correct in principle, positive in operation, elegant in design and finish, it is certainly desirable for such uses.

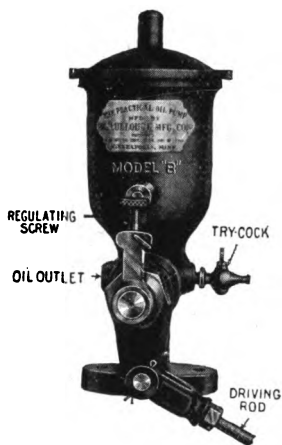


## Price List, Class G

Capacity, One-quarter pint.....	Brass Finish, \$2.15	Nickel Plated.....	\$2.50
Capacity, One-third pint.....	" " 2.50	" " .....	2 85
Capacity, One-half pint.....	" " 2.90	" " .....	3 25

We can furnish extras for any style of Lubricator,  
Write for Discounts.

## Practical Force Feed Oil Pump



After years of experimenting it has been proven beyond a doubt that the only reliable method of lubricating engine cylinders, valves, etc., is by means of force-feed pumps which are actuated by some part of the engine, in order that the oil should be fed in proportion to the speed of the engine, and that lubrication should commence and cease automatically with the engine. The ordinary hydrostatic lubricator does not meet these requirements; it cannot be adjusted accurately, is inconvenient to fill and cannot be relied upon, especially in cold weather. To overcome these and many other defects the "Practical Force-Feed Oil Pump" was placed on the market four years ago and has met with universal satisfaction.

**Simplicity of construction.**—An important feature of the Practical Force-Feed Oil Pump is the simplicity of its construction. It is made up of only ten pieces; one reservoir, one lid, two pieces to do the pumping and six pieces to regulate and hold them together; absolutely valveless; nothing could be more simple. The entire pump can be taken apart and put together again in ten minutes.

**Easily regulated.**—By means of a single regulating screw it can be regulated while the engine is in motion to pump from one drop every few minutes to any quantity desired.

**Oil Bowl easily filled.**—All you need to do is to lift off the lid and pour the oil in. No matter whether the oil is cold or warm it feeds just the same.

**When the engine stops, the oil pump stops oiling.**—When the engine is started, the oil pump starts oiling. There is nothing to forget or remember. The annoyance of the lubricator is entirely eliminated.

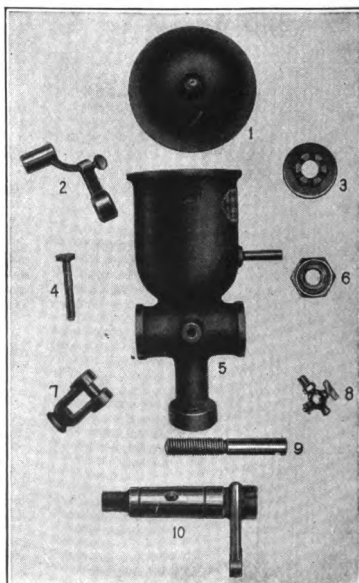
**Saves time, saves oil, saves fuel.**—Will pay for itself in less than three months in any Creamery.

**Easy to attach to any make of engine.**—Motion can be taken from the valve rod or any movable part of the engine which travels back and forth.

**The Busy Butter-Maker.**—With his many important duties cannot afford to waste his time and efforts on a common lubricator that has a habit of balking just when he should be elsewhere in the Creamery. Consider how much oil it wastes, how much time you have to spend cleaning, filling and regulating it, how its unreliability causes havoc with your engine, etc. Do away with all this waste and worry by using the "Practical Force-Feed Oil Pump."

**Price:** Complete with check valve, try-cock and clevis for driving the pump, \$10.00. (One quart size only.)

Equipped with a handsome sight-feed attachment when desired, \$2.00 extra.

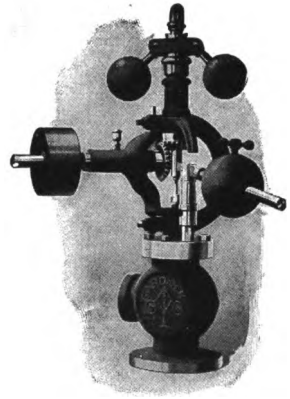


Only 10 parts in the entire construction of the Practical Pump. Parts 9 and 10 do the pumping

# Steam Engine Governors

## Pickering, Gardner, Waters or Judson

Size of Governor or Diameter of Steam Pipe in Inches.	Class B		Class A	
	Plain	Finished	Plain	Finished
1	\$14 00	\$16 00	\$18 50	\$20 00
1 1/4	16 00	18 00	21 00	23 00
1 1/2	18 00	20 00	24 50	27 50
1 3/4	21 00	24 00	29 50	33 50
2	25 00	29 00	36 00	40 00
2 1/4	30 00	34 00	42 00	47 00
2 1/2	35 00	40 00	48 00	53 00
2 3/4	40 00	45 00	59 00	67 00
3	50 00	58 00	71 00	80 00
3 1/2	60 00	69 00		



Class "B" with speeder only. Class "A" with speeder and stop motion.

In ordering, state whether bottom connections are screwed or flanged; speed of engine, diameter of governor belt pulley on main shaft.

## Oil Cups

Sight Feed—Prices

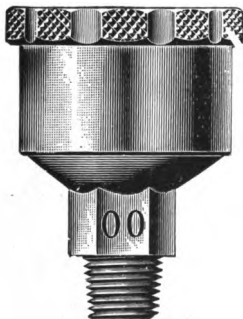
No.	0	1	1 1/2	2	3	4	5	6
Outside Diameter of glass, inches	1 1/8	1 1/4	1 3/8	2	2 1/8	2 1/2	3	3 1/2
Pipe thread								
Finished brass	1 25	1 50	1 75	2 10	2 55	3 15	3 90	4 80
Nickel-plated	1 40	1 70	2 00	2 35	2 85	3 50	4 30	5 30
Extra glasses, net.	08	10	10	12	15	25	35	65

## Plain

Diameter of body, inches	Iron pipe	Price, each	Diameter of body, inches	Iron pipe	Price, each
3/8 in.	1/8 in.	\$0 30	1 1/4 in.	1/2 in.	\$ 60
1/2 in.	1/4 in.	35	1 1/2 in.	5/8 in.	90
1 in.	3/8 in.	40	1 3/4 in.	3/4 in.	1 25
1 1/8 in.	1/2 in.	50	2 in.	7/8 in.	1 75

## Grease Cups—Compression

### Price List of Plain Cups



Plain Compression Cup

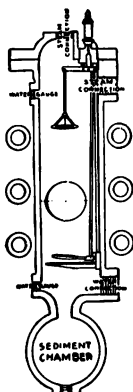
Number		00	0	1	2	3	4
Inside Diameter.....	in	1	1 1/4	1 1/2	2	2 1/2	3
Regular Pipe Thread...	in	1 1/8	1 1/4	1 1/2	2	2 1/2	3
Capacity (Grease).....	oz	1/2	1	1 1/2	2	3 1/2	5
Polished Brass Finish...	ea	.70	.90	1.15	1.50	2.15	3.50
Dull Brass Finish.....	ea	.56	.74	.96	1.28	1.76	3.00

### Price List of Automatic Cups

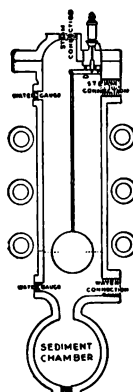
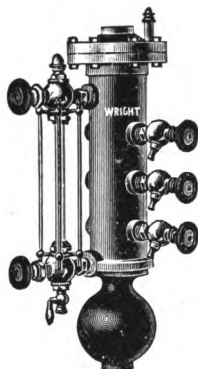
Number		000	00	0	1	2	3
Inside Diameter.....	in	3/4	1	1 1/4	1 1/2	2	2 1/2
Shank Pipe Thread.....	in	3/8	1/2	1 1/4	1 1/2	2	2 1/2
Capacity (Grease).....	oz	1/4	1/2	1	1 1/2	2	3 1/2
Finished Brass.....	ea	1.05	1.25	1.50	1.90	2.50	3.40
Rough Brass.....	ea	.90	1.10	1.35	1.70	2.30	3.10
Nickel Plated.....	ea	1.20	1.40	1.70	2.15	2.80	4.00

Cup Grease, per pound, 15 cents.

# Wright Improved Safety Water Columns



Section High and Low Alarm



Section Low Water Alarm

Every high pressure boiler not having an attendant constantly in charge should be equipped with a reliable low water alarm. The Wright column takes the place of the plain water columns furnished with boilers. It is furnished for both high and low alarms and for low alarm only. The operation is made clear by the sectional views.

## Combined High and Low Water Alarms

Price does not include water gauge or gauge cocks.

Size No.	Diameter of Boiler	Variation between Alarms	List Price
1	36" to 54"	6"	\$28.00
5	56" to 72"	8"	30.00

## Low Water Alarms

2	36" to 54"	..	25.00
6	56" to 72"	..	28.00

## Plain Water Columns

Bodies only. For combination water and steam gauges take price of body and add price of trimmings as specified in separate lists. Bodies are tapped and painted.

No.	1	2	3	4
C. to C. Boiler connections .....	10 in.	12½ in.	14 in.	18 in.
Price .....	\$2.75	\$4.00	\$6.00	\$8.00

## Steam and Pressure Gauges—Iron Case, Japanned

2½ inch dial .....	\$ 6.00	6 inch dial .....	13.00
3½ inch dial .....	7.00	6¾ inch dial .....	16.00
4½ inch dial .....	8.00	8½ inch dial .....	22.00
5 inch dial .....	8.00	10 inch dial .....	32.00
5½ inch dial .....	10.00	12 inch dial .....	50.00

## Water Gauges

Rough, ½ x 12 glass, ¾ iron pipe, each .....	\$3.00
Rough, ⅝ x 12 glass, ½ iron pipe, each .....	3.25
Finished, ⅝ x 12 glass, ½ iron pipe, iron wheels, each .....	5.50
Finished, ⅝ x 12 glass, ½ iron pipe, wood wheels, each .....	5.75

Write for Discounts on above Goods.

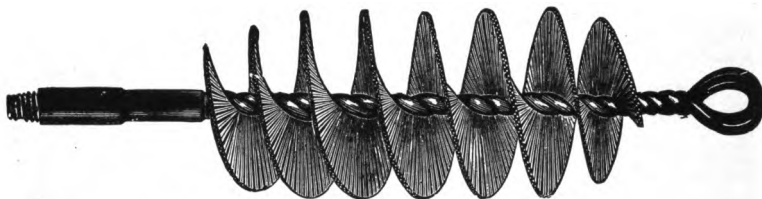
## Rubber Washers for Water Gauges

Price, per dozen .....	\$0.25
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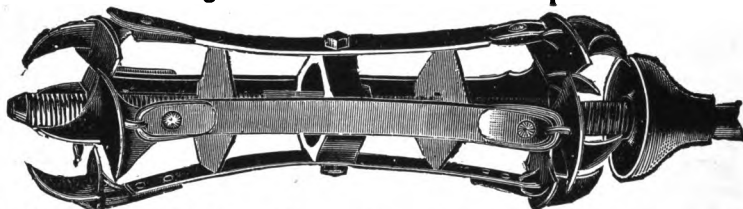
## Steel Brush Flue Cleaner



Sizes

1½ inch, 1¾ inch, 2 inch, 2¼ inch, 2½ inch and 3 inch in diameter.  
Per inch of diameter.....\$1.00  
In ordering always state size cleaner wanted.

## Engineers' "Favorite" Flue Scraper



Outside diam. of tubes, inches	1¾	2	2¼	2½	2¾	3	3¼
Price of flue scraper.....each,	\$2.00	\$2.00	\$2.25	\$2.50	\$2.75	\$3.00	\$3.25

## Steam Flue Cleaners For Upright or Horizontal Boilers



Size .....	No. 0	No. 1	No. 2	No. 3
For size of tube, outside diam.				
in inches.	1¼ to 1¾	2 to 2¼	2½ to 2¾	3 to 3¼
Price ea.	\$5 00	5 00	6 25	7 50

Write for Discounts

## Perfection Flue Cleaner



### Price List

Diam. of Flue.	List Price.	Diam. of Flue.	List Price.
1¼ inches.....	\$2.00	3 inches.....	3.00
1½ inches.....	2.00	3¼ inches.....	3.25
1¾ inches.....	2.00	3½ inches.....	3.50
2 inches.....	2.00	4 inches.....	4.00
2¼ inches.....	2.25	4½ inches.....	5.00
2½ inches.....	2.50	5 inches.....	6.00
2¾ inches.....	2.75		

## Exhaust Heads

An exhaust head prevents corrosion of the exhaust pipe, returns hot, soft water to the boiler feed and prevents the nuisance of an accumulation of water upon the roof. We furnish either sheet iron or cast iron heads. Illustration is of a sheet iron head with cast base.

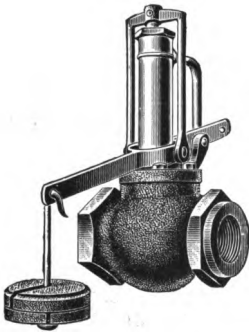
Diameter of Exhaust.	Sheet Iron, Price, each.	Cast Iron, Price, each.
2	\$14.00	\$25.00
2½	15.00	27.50
3	16.00	30.00
3½	17.00	35.00
4	18.00	40.00
5	20.00	50.00
6	23.00	60.00



## Davis Pressure Regulators or Reducing Valves

The No. 1 Regulator or Reducing Valve will reduce any initial pressure of 200 lbs. or less to any lower delivery pressure and maintain it constantly, regardless of the demand or fluctuations in the high pressure. It can be set in the pipe line so as to control the pressure at some particular piece of apparatus, or for the entire plant.

Where delivery pressure is subject to pulsation, the No. 2 regulator should be used. This has a dash pot to prevent the lever jumping. The No. 1 style has a lug cast on the body, so a dash pot can be attached at any time, if necessary.



Size Inches.	Price List	
	Price No. 1.	Price No. 2.
½	\$20.00	\$25.00
¾	20.00	25.00
1	22.00	27.00
1¼	24.00	29.00
1½	25.00	30.00
2	30.00	36.00
2½	35.00	42.00
3	40.00	48.00

## Standard Brass Water Relief Valves

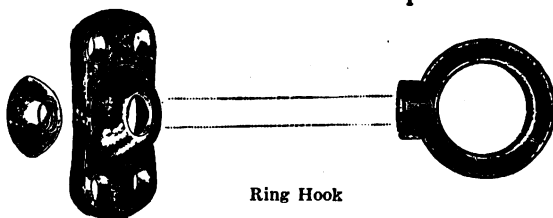
Set at any pressure specified up to 250 lbs. In ordering, be sure to state the pressure at which valves are wanted set to relieve.

½ inch.....	\$10.00
¾ inch.....	10.00
1 inch.....	12.50
1¼ inch.....	15.50
1½ inch.....	19.00
2 inch.....	28.00
2½ inch.....	40.00



## Pipe Hangers

### Expansion



Ring Hook

Size of Pipe	¾	1	1¼	1½	2	2½	3
Ring Hook	.17	.18	.19	.25	.29	.36	.44
Sectional	.32	.33	.35	.45	.55	.65	.80

Ring hooks must be put on before pipe is screwed together. Sectional rings should be used where pipe is to be taken down frequently, as, for instance, milk pipes.

## Floor and Ceiling Plates

Price Each

Size	¾ In.	¾ In.	1 In.	1¼ In.	1½ In.	2 In.
Floor	\$0.06	\$0.06	\$0.08	\$0.11	\$0.14	\$0.16
Ceiling	.11	.13	.16	.18	.23	.27

## Hook Plates

No. of Hooks	1	2	3	4	5	6
For 1¼ inch pipe, 3 inches between centers, expansion	\$0.17	.27	.40	.60	.70	.80
" 1 " " 2½ " " " " plain	.15	.25	.35	.50	.60	.70
" 1¼ " " 3 " " " " " "	.10	.21	.27	.32	.41	.52
" 1 " " 2¾ " " " " " "	.09	.18	.23	.26	.32	.38

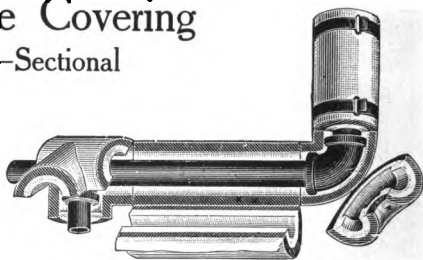
## Branch Tees

Number of branches	2	3	4	5	6	7	8	10	12
Size, pipe, 1 In. Inside diam.	\$0.90	\$1.05	\$1.15	\$1.35	\$1.60	\$1.90	\$2.20	.....	.....
" " 1¼ " " " 2½ "	1.65	2.00	2.40	2.80	3.20	3.60	4.80	5.25	
" " 1½ " " " 2¾ "	2.70	3.35	4.00	4.65	5.25	5.85	7.60	8.50	

## Steam Pipe Covering

### Asbestos—Sectional

All steam pipes not used for heating the room they are in should be covered with some good non-conducting material. This is especially true of the main pipes leading from the boiler. Good pipe covering costs but a few cents per foot and will quickly pay for itself in the saving in fuel. This covering is composed of asbestos and other fire proof, non-conducting materials. It is moulded in sections to fit all regular sizes of pipes with moulded Ells, Tees, Valves, etc. An unskilled workman can apply it.



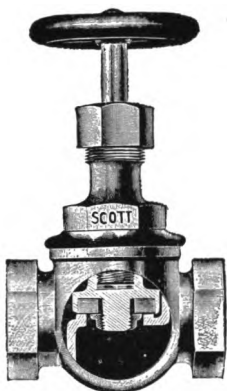
Price List

Inside Diameter of Pipe	Covering Per Foot	Elbows Each	Tees Each	Valves Each
¾ In.	\$0.22	\$0.30	\$0.36	\$ .54
¾ " "	.24	.30	.36	.54
1 " "	.27	.30	.36	.54
1¼ " "	.30	.30	.36	.54
1½ " "	.33	.30	.36	.54
2 " "	.36	.36	.42	.60
2½ " "	.40	.42	.48	.78
3 " "	.45	.48	.54	.96
3½ " "	.50	.54	.60	1.20
4 " "	.60	.60	.75	1.50

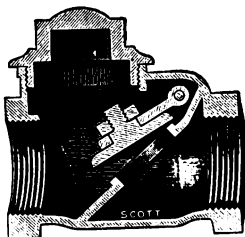
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# Pipe and Fittings

Size of Pipe ...	$\frac{1}{8}$ in.	$\frac{1}{4}$ in.	$\frac{3}{8}$ in.	$\frac{1}{2}$ in.	$\frac{3}{4}$ in.	1 in.	1 $\frac{1}{4}$ in.	1 $\frac{1}{2}$ in.	2 in.	2 $\frac{1}{2}$ in.	3 in.	3 $\frac{1}{2}$ in.
Black, per ft. {	\$0 05 $\frac{1}{2}$	\$0 05 $\frac{1}{2}$	\$0 05 $\frac{1}{2}$	\$0 08 $\frac{1}{2}$	\$0 11 $\frac{1}{2}$	\$0 16 $\frac{1}{2}$	\$0 22 $\frac{1}{2}$	\$0 27	\$0 36	\$0 57 $\frac{1}{2}$	\$0 75 $\frac{1}{2}$	\$0 95
Galv., per ft. {												
Cutting threads,												
per thread ...	5	5	5	5	5	6	7	8	10	15	20	25
Size of Fittings in inches .....	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$
<b>ELBOWS</b>												
Black cast, R. H. ....				\$ 05	\$ 05	\$ 06	\$ 08	\$ 10 $\frac{1}{2}$	\$ 16	\$ 20	\$ 28	\$ 50
Galv. Mall'ble, R. H. ....				9	11	14	20	32	40	60	90	1 50
Black mall'ble, R. H. ....				\$0 06	7	8	10	15	22	35	50	80
Black cast, reducing .....						7	9	12	25	35	60	1 50
Black cast, R. & L. ....				6	6	7	9	12	18	23	32	60
Black cast, 45° .....					6	7	10	12	18	23	32	60
Black malleable, street .....				10	10	12	20	25	40	55	80	1 50
Galvani'd " .....				12	12	15	28	35	55	80	1 30	2 20
<b>RETURN BENDS</b>												
Black cast, open R. H. ....							26	30	40	55	80	1 35
" " R. & L. ....							30	35	46	64	92	1 55
" " close R. H. ....						18	20	22	28	40	57	1 20
" " R. & L. ....						21	23	26	33	46	66	1 40
<b>TEES</b>												
Black cast, ....				8	8	9	12	15	23	29	41	73
Galvanized malleable .....				9	10	13	16	20	38	50	70	1 00
Black malleable .....				07	08	09	11	15	25	30	45	60
Black cast, reducing .....						10	14	17	27	33	47	83
<b>CROSSES</b>												
Black cast .....						16	22	27	42	53	75	1 30
Galvanized mall'ble .....						25	29	45	60	90	1 50	2 75
Black cast, reducing .....						18	25	30	46	60	83	1 45
<b>UNIONS</b>												
Black malleable .....				18	18	20	22	27	33	46	58	75
Galvanized mall'ble .....				27	27	30	33	40	50	70	90	1 15
Black cast, flanged,												
rubber gasket .....							40	46	52	64	78	1 00
Galvanized cast, flanged,												
rubber gasket .....						80	92	1 04	1 28	1 56	2 00	2 50
<b>NIPPLES</b>												
Black, close or short .....				4	4	4	5	6	8	11	13	18
Galv'd, close or short .....				6	6	6	6	8	11	17	21	27
Black, long .....				6	6	6	7	9	13	17	20	27
Galvanized, long .....				11	11	11	11	14	19	29	35	47
<b>COUPLINGS</b>												
Black wrought .....				5	5	6	7	10	13	17	21	28
Galvanized wrought .....				6	6	8	10	13	18	25	32	40
Black wr'g't, R. & L. ....				7	7	8	11	15	20	25	30	50
Bl'k mall'ble, R. & L. ....				4	6	8	12	16	25	36	52	85
Galvanized malleable												
R. & L. ....				6	9	10	17	25	35	55	75	1 20
<b>REDUCERS</b>												
Black malleable .....				5	6	7	10	16	20	28	45	70
Galvanized malleable .....				8	10	10	15	25	35	45	75	1 05
<b>PLUGS</b>												
Black cast .....				2	2	2	3	4	5	7	10	18
Galvanized cast .....				4	4	4	6	8	10	14	20	36
<b>CAPS</b>												
Black malleable .....				3	4	5	8	12	16	24	32	45
Galvanized malleable .....				4	5	8	12	17	24	38	52	76
<b>BUSHINGS</b>												
Black cast .....						4	4	5	6	7	9	14
Galvanized cast .....						8	8	10	12	14	18	28
Black malleable .....				4	4	4	4	5	6	7	9	14
Galvanized malleable .....				8	8	8	8	10	12	14	18	25
<b>LOCK NUTS</b>												
Black malleable .....				2	3	4	5	7	9	11	18	27
Galvanized malleable .....				3	4	5	7	10	14	20	30	54



Scott J. D. Globe Valve



Scott Swing Check Valve



Scott No. 1 Gate Valve

Size .....	¼"	⅜"	½"	¾"	1"	1¼"	1½"	2"	2½"	3"
Brass J. D. Globe and Angle.....	\$1 10	\$1 25	\$1 60	\$2 20	\$2 80	\$4 00	\$5 50	\$8 75	\$15 75	\$22 00
Brass Swing Check.....			1 50	1 75	2 25	3 25	4 25	6 25	12 00	20 00
Brass No. 1 Gate.....	1 25	1 25	1 30	1 75	2 50	3 50	5 00	7 50	14 00	20 00
Size .....	2"	2½"	3"	3½"	4"	4½"	5"	6"	7"	8"
I. B. J. D. Globe and Angle, S. E		12 00	16 75	19 50	24 00	32 00	40 00	48 00	80 00	90 00
I. B. J. D. Globe and Angle, F. E.....		14 00	18 50	21 50	26 00	34 00	42 00	50 00	80 00	90 00
I. B. Gate, S. E. and F. E.....	10 00	12 00	15 00	18 00	20 00	23 00	25 00	30 00	45 00	55 00

## Lunkenheimer's Handy Gate Valves

With Screwed Ends Only

Size, inches. . .	½	¾	1	1¼	1½	2	2½	3
Price, brass body .....	\$1 60	\$1 80	\$2 50	\$3 50	\$5 00	\$7 50	\$13 50	\$19 00
Price, iron b'dy br'ss m't'd. . .						7 00	12 00	15 00
Price, all iron .....		3 40	4 00	4 50	6 00	7 00	12 00	15 00



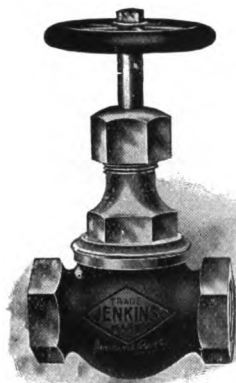
## Vulcanized Asbestos Packed Iron Cocks

For Boilers, Blow-off, Water Columns, Etc.

Size, inches .....	½	¾	1	1¼	1½	2	2½	3
Price. ....	\$1 30	\$1 30	\$1 45	\$1 60	\$2 10	\$2 50	\$3 50	\$4 75
Size, inches .....	2	2½	3	3½	4	5	6	
Price. ....	\$7 00	12 00	18 00	27 00	30 00	45 00	60 00	

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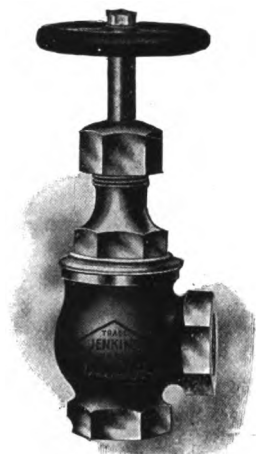
## Valves



Globe



Check



Angle

### Jenkins' Disc Globe, Check and Angle

Size, inches . . . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Globe and angle valves, brass . . . .	\$1 10	1 25	1 60	2 20	2 80	4 00	5 50	8 75	15 75	22 00
Globe and angle valves, flanged . .	3 50	4 00	4 00	5 00	6 00	9 00	11 00	15 50	25 00	34 00
Check valves . . . . .	1 10	1 20	1 30	1 90	2 60	3 60	5 00	7 50	13 50	21 00

"Jenkins'"



Discs

Size, inches . . . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price . . . . .	\$0 03	0 04	0 04	0 05	0 06	0 09	0 12	0 18	0 24	0 40

NOTE.—To save delay, ALWAYS send sample of disc required.



### "Pop" Safety

Stationary, Portable and Farm Engine Style

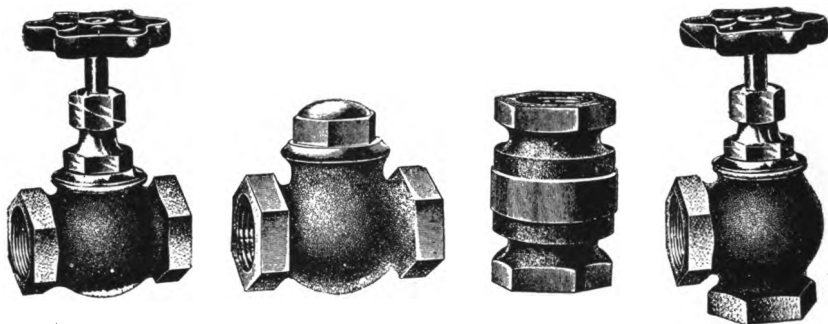
$\frac{3}{4}$ inch, for boilers,	3 to 6 horse power	\$10 00
1 " " "	3 to 10 " "	12 00
$1\frac{1}{4}$ " " "	10 to 20 " "	15 00
$1\frac{1}{2}$ " " "	20 to 30 " "	20 00
2 " " "	30 to 40 " "	30 00

### "Ball" Safety

Size, inches . . . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Brass Body . . . . .	\$2 20	2 50	3 25	3 90	4 70	7 15	9 00	12 50	17 25	21 00
Iron " . . . . .	4 00	5 00	5 80	7 80	13 25	17 25	21 00	25 00	30 00	35 00

## Valves

"Common" Brass, Globe Check and Angle



Size, inches. . . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Price, Check, each	\$0 65	\$0 70	\$0 90	\$1 15	\$1 60	\$2 25	\$3 15	\$4 75	\$9 00	\$13 00
" Globe or angle	72	77	1 00	1 26	1 80	2 52	3 50	5 30	10 00	14 40
" Vertical Check.	72	77	1 00	1 26	1 80	2 52	3 50	5 30	10 00	14 40

## Steam and Water Cocks



Steam Square Head



Cock Wrench

Square Head



3 Way Square Head

Size of Fittings in Inches . . . . .	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
<b>COCKS</b>										
Steam or Water Sq. or Flat Head. . .	\$0 85	\$1 00	\$1 25	\$1 70	\$2 35	\$3 70	\$4 85	\$7 30	\$14 50	\$22 50
3-way Square Head. . . . .		2 10	2 50	3 00	3 75	5 75	7 15	11 00	18 75	26 00
<b>COCK WRENCHES</b>										
Black malleable Sq. Head. . . . .			7	9	14	19	25	44	56	56
Black malleable Flat Head. . . . .			7	9	14	25	44	56	1 00	1 00

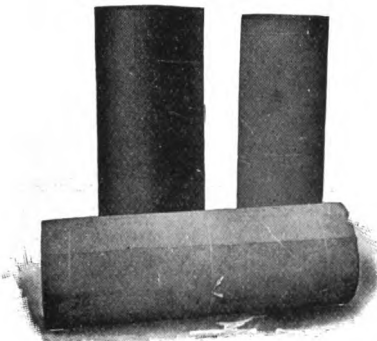
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# Packing

## "Cloth Insertion"

Cloth on one or both sides. This article is now considered indispensable by engineers and machinists wherever steam, air, or water joints are to be made, as no substance has so much elasticity and stands so high a degree of heat.



Thickness, in.	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$
1-ply, per lb.....	\$0.70	\$0.65	\$0.60	\$0.55
2-ply, per lb.....	.....	.....	.63	.58
3 ply, per lb.....	.....	.....	.....	.61
4 ply, per lb.....	.....	.....	.....	.....
Thickness in.	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	
1-ply, per lb.....	.....	.....	.....	.....
2-ply, per lb.....	\$0.55	.....	.....	.....
3 ply, per lb.....	.58	\$0.55	.....	.....
4-ply, per lb.....	.61	.58	\$0.55	.....

## "Rainbow" Sheet

Price, per lb.....\$1.00

Made in the following thicknesses:

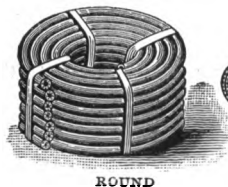
$\frac{1}{8}$ ,  $\frac{3}{16}$ ,  $\frac{1}{4}$ ,  $\frac{5}{16}$ ,  $\frac{3}{8}$ , and  $\frac{1}{2}$  inch.

## "Jenkins'" Sheet

Price, per lb.....\$1.00

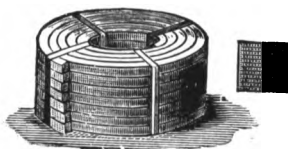
Made in the following thicknesses:  $\frac{1}{8}$ ,  $\frac{3}{16}$ ,  $\frac{1}{4}$ ,  $\frac{5}{16}$ ,  $\frac{3}{8}$ , and  $\frac{1}{2}$  inch.

## Piston



ROUND

Round Empire Gum Core  
 $\frac{1}{4}$  to  $\frac{1}{2}$  inch. Per lb....\$0.50  
 Selden's,  $\frac{1}{4}$  inch and  
 larger. Per lb..... .60  
 Jenkins' Square Manhat-  
 tan. Per lb..... 1.00  
 Square Duck, with rub-  
 ber back. Per lb.....\$1.00  
 Square Flax. Per lb..... .85



SQUARE

## Hemp

Best Italian, per lb.....\$0.25

## Asbestos Wick

In  $\frac{1}{4}$ ,  $\frac{1}{2}$  and 1 lb. balls, per lb.....\$0.30

## Candle Wicking

Per lb.....\$0.25 Per ball.....\$0.05

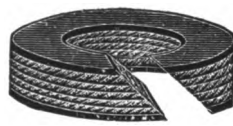
## Garlock

For any size of Piston and Box.

Price, per lb.....\$1.20



SPIRAL



ELASTIC RING

In ordering "Spiral" packing, give exact space between rod and stuffing box. Sold in full boxes only. Weight, per box,  $\frac{3}{8}$  lb. for  $\frac{1}{8}$  inch, to  $3\frac{3}{4}$  lb. for  $\frac{1}{2}$  inch. In ordering "Elastic Ring" packing, be very careful in taking measurements. With a pair of calipers take the exact diameter of rod, also diameter of stuffing box. These measurements must be very exact, even to one sixty-fourth of an inch, otherwise we cannot give you an exact fit. "Elastic Ring" packing is all cut to order, so can furnish any size wanted, from  $\frac{1}{8}$  to 30 inches diameter.

## Gaskets and Rings

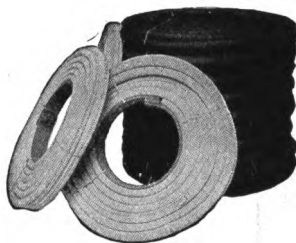
### Cloth Insertion

There is one ply of cloth to every  $\frac{1}{8}$  inch thickness. Regular shapes and sizes, per lb.....\$1.00

## "Eclipse" Gasket Tubing

Made in any size. The user cuts off length required, and inserts metal tube to join the ends. Very convenient. Price, per lb.....\$1.00

## Hose



STEAM				CONDUCTING				
Internal Diameter	3-ply	4-ply	5-ply	Internal Diameter	2-ply	3-ply	4-ply	5-ply
$\frac{1}{2}$ inch.....	\$0 47	\$0 53	\$0 70	$\frac{1}{2}$ inch.....	\$0 20	\$0 25	\$0 30	\$0 37
$\frac{3}{4}$ ".....	57	71	87	$\frac{3}{4}$ ".....	25	30	37	46
1 ".....	70	87	1 07	1 ".....	33	40	50	62
$1\frac{1}{4}$ ".....	85	1 04	1 30	$1\frac{1}{4}$ ".....	42	50	62	77
$1\frac{1}{2}$ ".....	1 02	1 25	1 56	$1\frac{1}{2}$ ".....	50	60	75	93
$1\frac{3}{4}$ ".....	1 18	1 45	1 81	2 ".....	66	80	1 00	1 25
2 ".....	1 34	1 66	2 07	$2\frac{1}{2}$ ".....	83	1 00	1 25	1 56

## Wire Wound Hose

Winding conducting hose with round steel wire prevents expansion and adds greatly to the strength and durability of the hose.

### Price for Winding

	3-ply	4-ply	5-ply	6-ply		3-ply	4-ply	5-ply	6-ply
$\frac{1}{2}$ inch...per ft.	\$0 04	\$0 05	\$0 06	\$0 07	$1\frac{1}{2}$ inch...per ft.	\$0 10	\$0 12 $\frac{1}{2}$	\$0 15	\$0 18
$\frac{3}{4}$ " " "per ft.	05	06 $\frac{1}{2}$	08	10	$1\frac{3}{4}$ " " "per ft.	12	15	18	22
1 " " " "per ft.	06 $\frac{1}{2}$	08	10	12	2 " " " "per ft.	13	16	20	24
$1\frac{1}{4}$ " " " "per ft.	08 $\frac{1}{2}$	10	13	15	$2\frac{1}{2}$ " " " "per ft.	16	20	25	30

## Hard Rubber Suction

This hose is intended for pumps. It will not collapse, and will be found a reliable, low-priced article.

Int. Diam.	Per ft.	Int. Diam.	Per ft.	Int. Diam.	Per ft.	Int. Diam.	Per ft.
$\frac{1}{2}$ inch.....	\$0 65	$1\frac{1}{4}$ inch.....	\$0 93	$1\frac{1}{2}$ inch.....	\$1 31	$2\frac{1}{4}$ inch.....	\$1 69
1 ".....	75	$1\frac{1}{2}$ ".....	1 13	2 ".....	1 50	$2\frac{1}{2}$ ".....	1 88

## Inserted Wire Suction

Same list as Hard Rubber Suction Hose

## Cotton Garden, Rubber Lined

$\frac{1}{2}$ inch.....	per foot\$.....	$1\frac{1}{2}$ inch.....	per foot\$.....
$\frac{3}{4}$ ".....	".....	$1\frac{3}{4}$ ".....	".....
1 ".....	".....	2 ".....	".....

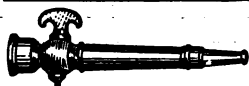
Prices for this hose will be furnished on application.

## Hose Fittings



### Hose Pipe with Screw Tip

Size, inches .....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Length .....	$7\frac{1}{2}$	$8\frac{1}{2}$	11	13	20
Price .....	\$0 70	85	1 65	2 10	4 20



### Hose Pipe with Cock

Size, inches .....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$
Length .....	$6\frac{1}{2}$	12	15	15
Price .....	\$0 90	1 65	4 20	5 50

Iron pipe thread and special lengths, extra.



### Hose Nozzle

Size, inches .....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Length to screw, inches .....	3	4	$4\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$
Length to wind, inches .....	$5\frac{1}{2}$	6	$6\frac{3}{4}$	...	...
Hose pipe thread, each .....	\$0 35	40	1 00	1 50	2 20
Iron pipe thread, each .....	40	55	1 15	1 65	2 40
To wind, each .....	35	40	...	...	...



### Hose Couplings (Brass)

Size, inches .....	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Price .....	\$0 20	35	85	1 15	2 00



### Hose Clamps

Size, inches ....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$
Price, each ....	\$0 15	15	20	25	30	40	60



### Hose Nipples

Size, inches .....	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2
Price, each .....	\$0 30	30	45	75	85	1 15

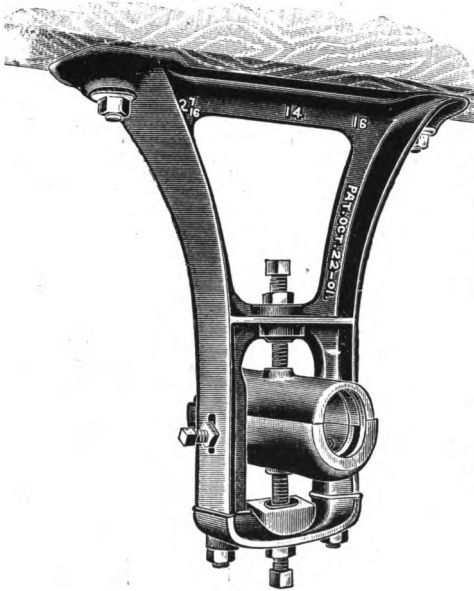


### Hose Menders

Size, inches .....	$\frac{1}{2}$	$\frac{3}{4}$	1
Price, per dozen .....	\$0 60	60	75

Prices on this page subject to discount.

## Shaft Hangers



### Drop Hangers

The illustration is of a universal, ball and socket ring oiling hanger with double brace. Bearings babbitted and reamed.

Size of Box	Drop				
	6-8 Inches	10-12 Inches	14-16 Inches	18-20 Inches	22-24 Inches
1 3/16"	\$4.50	\$5.00	\$5.75	\$6.50	\$7.50
1 1/8"	5.00	5.50	6.25	7.00	8.00
1 1/4"	6.00	6.50	7.25	8.00	8.50
1 3/8"	7.00	7.50	8.25	8.75	9.50
2 3/16"	8.50	9.25	10.00	10.50	11.00
2 1/8"	9.50	10.50	11.50	12.50	13.50

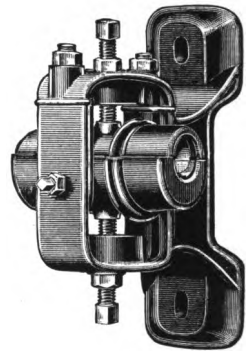
**Wick Oiling Hangers.** Deduct \$1.00 from list price of ring oiling hangers above.

### Post Hangers

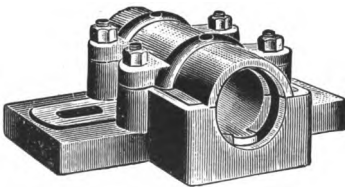
Illustration is of ring oiling, adjustable, ball and socket post hanger. We also furnish wick oiling hangers as per list. Center of shaft is 7 inches from post. Adjustment either side or vertical, 1 inch.

Size of Box.	Price Ring Oiling.
1 3/16 inch.....	\$4.25
1 7/16 inch.....	5.25
1 11/16 inch.....	6.00
1 15/16 inch.....	7.00
2 3/16 inch.....	8.75
2 7/16 inch.....	10.25

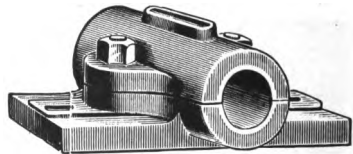
Price Wick Oiling.
\$3.25
4.25
5.00
6.00
7.75
9.25



### Rigid Pillow Block



### Common Pillow Block



#### Ring Oiling. Bearings Babbitted

Size	Price	Size	Price
1 3/16"	\$3.75	1 1/8"	\$6.00
1 1/8"	4.50	2 3/16"	7.00
1 1/4"	6.25	2 1/8"	8.00

#### Have Babbitted Bearings

Size	Price	Size	Price
1 3/16"	\$1.50	1 1/8"	\$3.50
1 1/8"	2.25	2 3/16"	4.00
1 1/4"	2.75	2 1/8"	4.75

Can furnish Ball and Socket Pillow Blocks.

Prices on this Page Subject to Discount.

## Cold Rolled Shafting

Diameter	Approximate Weight per Ft.	Price per Foot	Diameter	Approximate Weight per Ft.	Price per Foot
1 $\frac{1}{4}$ inch	8 $\frac{1}{2}$ lbs.	\$0.75	1 $\frac{1}{2}$ inch	10 lbs.	\$1.05
1 $\frac{3}{8}$ "	5 $\frac{1}{2}$ lbs.	.80	2 $\frac{1}{4}$ "	12 $\frac{1}{4}$ lbs.	1.25
1 $\frac{1}{2}$ "	7 $\frac{1}{2}$ lbs.	.87	2 $\frac{1}{2}$ "	15 $\frac{1}{4}$ lbs.	1.55

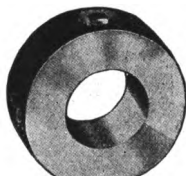
### Shaft Couplings Compression and Flange Face

Size	Compression	Flange Face
1 3/16	\$ 5.00	\$ 7.50
1 7/16	6.00	8.00
1 11/16	7.00	8.50
1 15/16	8.50	9.00
2 3/16	10.00	10.50
2 7/16	11.00	12.50

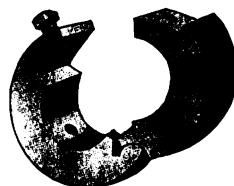
### Shaft Collars



Plain.



Safety.



Split.

1 3/16	\$0.80	1 15/16	\$1.40
1 7/16	1.00	2 3/16	1.60
1 11/16	1.20	2 7/16	1.80

For prices on split collars, add 50% to list.

### Expansion Bolts



Malleable Shields for all sizes with Square Head Lag Screws, per 100.  
September 1st, 1907.

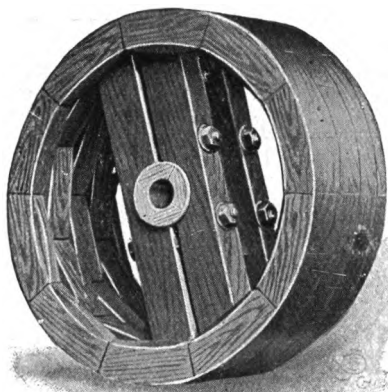
Diameter Length	$\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "	$\frac{7}{8}$ "	1"
2 "	\$ 9.75	\$10.50						
2 $\frac{1}{2}$ "	9.90	10.65	\$14.30	\$21.75	\$28.55	\$43.50		
3 "	10.05	10.80	14.45	22.05	28.90	44.00		
4 "	10.35	11.10	14.75	22.80	29.65	45.00		
5 "	10.65	11.40	15.20	23.30	30.40	46.00		
6 "	10.95	11.70	15.60	23.80	31.15	47.00		
7 "		12.00	15.90	24.30	31.90	48.00	\$62.00	\$71.00
8 "			16.20	24.80	32.65	49.00	63.00	73.50
9 "				25.30	33.40	50.00	64.00	75.35
10 "					34.20	51.00	65.00	77.15
11 "					34.90	52.00	66.00	79.00
12 "					35.65	53.00	68.00	80.90
								82.80

### Wood or Lag Screws

With square heads. For fastening hangers and separators.  
Price, per dozen.

Length	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{3}{4}$ "
3	\$0.40	\$0.60	\$0.85	\$1.20
4	.50	.70	1.00	1.35
5	.55	.75	1.10	1.55
6	.60	.85	1.20	1.70

Prices on this Page Subject to Discount.



## Wood Split Pulley

"Lawson"

Has rigid hub, separated to pass the air. It is built into and forms part of the rim. Heavy bolts used. Holes standard size, with separable split bushes. The segments are both glued and nailed, with their inner side made hexagonal to increase stiffness of rim. Made every size diameter or face, and any size hole can be furnished. Made for heavy work.

Diam. Inches	WIDTH OF FACE IN INCHES.										
	3	4	5	6	8	10	12	14	16	18	20
4	\$2 80	\$2 90	\$3 10	\$3 30	\$3 70	\$4 10	\$4 50	.....	.....	.....	.....
5	2 85	2 95	3 20	3 40	3 85	4 30	4 75	.....	.....	.....	.....
6	2 90	3 00	3 25	3 50	4 00	4 50	5 00	.....	.....	.....	.....
7	2 95	3 05	3 35	3 60	4 15	4 70	5 25	5 80	.....	.....	.....
8	3 00	3 10	3 40	3 70	4 30	4 90	5 50	6 10	.....	.....	.....
9	3 10	3 25	3 60	3 90	4 55	5 20	5 85	6 50	.....	.....	.....
10	3 25	3 40	3 75	4 10	4 80	5 50	6 20	6 90	\$7 60	.....	.....
11	3 50	3 70	4 10	4 50	5 30	6 10	6 90	7 70	8 50	.....	.....
12	3 75	4 00	4 45	4 90	5 80	6 70	7 60	8 50	9 40	\$10 30	.....
13	.....	4 30	4 80	5 30	6 30	7 30	8 30	9 30	10 30	11 30	.....
14	.....	4 60	5 15	5 70	6 80	7 90	9 00	10 10	11 20	12 30	\$13 40
15	.....	4 90	5 50	6 10	7 30	8 50	9 70	10 90	12 10	13 30	14 50
16	.....	5 20	5 85	6 50	7 80	9 10	10 40	11 70	13 00	14 30	15 60
17	.....	5 50	6 20	6 90	8 30	9 70	11 10	12 50	13 90	15 30	16 70
18	.....	5 80	6 55	7 30	8 80	10 30	11 80	13 30	14 80	16 30	17 80
19	.....	6 10	6 90	7 70	9 30	10 90	12 50	14 10	15 70	17 30	18 90
20	.....	6 40	7 25	8 10	9 80	11 50	13 20	14 90	16 60	18 30	20 00
22	.....	7 00	7 95	8 90	10 80	12 70	14 60	16 50	18 40	20 30	22 20
24	.....	7 70	8 80	9 90	12 10	14 30	16 50	18 70	20 90	23 10	25 30
26	.....	8 40	9 65	10 90	13 40	15 90	18 40	20 90	23 40	25 90	28 40
28	.....	9 10	10 50	11 90	14 70	17 50	20 30	23 10	25 90	28 70	31 50
30	.....	9 80	11 35	12 90	16 00	19 10	22 20	25 30	28 40	31 50	34 60
32	.....	10 50	12 20	13 90	17 30	20 70	24 10	27 50	30 90	34 30	37 70
34	.....	11 30	13 15	15 00	18 70	22 40	26 10	29 80	33 50	37 20	40 90
36	.....	12 10	14 10	16 10	20 10	24 10	28 10	32 10	36 10	40 10	44 10
38	.....	.....	.....	17 20	21 50	25 80	30 10	34 40	38 70	43 00	47 30
40	.....	.....	.....	18 30	22 90	27 50	32 10	36 70	41 30	45 90	50 50
42	.....	.....	.....	19 60	24 60	29 60	34 60	39 60	44 60	49 60	54 60
44	.....	.....	.....	20 90	26 30	31 70	37 10	42 50	47 90	53 30	58 70
46	.....	.....	.....	22 30	28 10	33 90	39 70	45 50	51 30	57 10	62 90
48	.....	.....	.....	23 80	30 00	36 20	42 40	48 60	54 80	61 00	67 20
50	.....	.....	.....	25 40	32 00	38 60	45 20	51 80	58 40	65 00	71 60

Prices on this Page Subject to Large Discount.

# Steel Split Pulleys—Price List

In Ordering Give Size of Shaft.

## WIDTH OF FACE IN INCHES

Diam. in inch	2 inch	3 inch	4 inch	5 inch	6 inch	8 inch	10 inch	12 inch	14 inch	16 inch
6	\$ 3.15	\$ 3.30	\$ 3.45	\$ 3.75	\$ 4.05	.....	.....	.....	.....	.....
7	3.22	3.38	3.60	3.90	4.20	.....	.....	.....	.....	.....
8	3.30	3.45	3.75	4.05	4.35	\$ 4.95	\$ 5.60	.....	.....	.....
9	3.38	3.60	3.90	4.20	4.50	5.10	5.75	.....	.....	.....
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	\$ 6.45	.....	.....
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90	.....	.....
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	.....	.....
13	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	.....	.....
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	.....	.....
15	4.35	4.65	5.45	5.80	6.55	7.65	8.80	9.75	.....	.....
16	4.50	4.95	5.75	6.10	6.90	8.25	9.45	10.50	.....	.....
17	.....	5.25	6.00	6.50	7.28	8.78	10.05	11.25	.....	.....
18	.....	5.55	6.38	7.00	7.65	9.30	10.65	12.00	.....	.....
19	.....	5.80	6.75	7.50	8.25	10.13	11.25	12.90	.....	.....
20	.....	6.00	7.50	8.10	9.00	10.73	12.00	14.25	.....	.....
21	.....	6.25	8.00	8.90	9.60	11.25	12.98	15.60	\$18.00	\$20.75
22	.....	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.80	22.20
23	.....	7.00	8.70	9.90	10.58	12.60	14.75	18.00	20.70	24.75
24	.....	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.80	27.30
26	.....	.....	9.55	10.50	11.95	14.40	17.10	21.30	26.25	31.20
28	.....	.....	10.80	11.70	12.90	15.45	18.15	22.90	28.50	34.50
30	.....	.....	12.00	12.90	14.10	17.25	19.90	24.75	31.50	38.10
32	.....	.....	13.20	14.10	15.45	19.35	22.50	26.85	35.15	41.65
34	.....	.....	14.40	15.75	17.25	21.75	25.50	30.00	36.75	45.00
36	.....	.....	15.90	17.85	19.50	24.00	28.65	33.75	39.75	48.60
38	.....	.....	19.50	20.65	21.75	26.40	31.05	37.15	42.75	51.75
40	.....	.....	21.00	22.75	24.00	28.50	33.75	40.15	46.50	55.15
42	.....	.....	23.25	24.75	26.25	32.25	37.50	43.50	50.25	57.75
44	.....	.....	.....	.....	30.20	37.10	43.13	50.00	57.80	66.40
46	.....	.....	.....	.....	34.70	42.63	49.60	57.50	66.35	76.35
48	.....	.....	.....	.....	39.91	49.00	57.05	66.15	76.29	87.80
50	.....	.....	.....	.....	45.45	55.95	63.45	76.45	84.75	100.65
52	.....	.....	.....	.....	49.10	60.20	68.25	81.85	90.80	107.55
54	.....	.....	.....	.....	52.70	64.55	73.25	87.45	97.00	114.65
56	.....	.....	.....	.....	55.70	67.65	76.55	91.30	101.60	119.55
58	.....	.....	.....	.....	58.55	70.75	79.90	95.15	106.10	124.70
60	.....	.....	.....	.....	61.60	73.80	83.30	99.00	110.60	129.30

Subject to discount.

## Iron Pulleys—Machine Molded

Bored, turned and balanced, with set screws or key seats. In ordering give bore, whether crown or straight face and set screws or key seats.

### Price List of Solid Pulleys

Diam. Inches	WIDTH OF FACE IN INCHES.									
	3	4	5	6	8	10	12	14	16	18
6	\$ 2.50	\$ 2.80	\$ 3.15	\$ 3.60	\$ 4.55	\$ 5.55	\$ 6.55	.....	.....	.....
7	2.70	3.05	3.50	3.95	4.90	5.85	6.85	.....	.....	.....
8	2.90	3.35	3.80	4.25	5.25	6.35	7.60	.....	.....	.....
9	3.20	3.65	4.15	4.65	5.75	6.90	8.15	.....	.....	.....
10	3.45	3.95	4.45	5.00	6.15	7.50	8.95	.....	.....	.....
11	3.70	4.25	4.80	5.40	6.65	8.00	9.55	.....	.....	.....
12	3.95	4.55	5.15	5.80	7.15	8.60	10.15	\$11.75	.....	.....
13	4.20	4.85	5.50	6.20	7.65	9.20	10.85	12.60	.....	.....
14	4.50	5.20	5.95	6.70	8.30	9.95	11.70	13.50	.....	.....
15	4.80	5.55	6.35	7.15	8.85	10.65	12.55	14.50	.....	.....
16	5.10	5.80	6.60	7.45	9.20	11.05	13.00	15.00	\$17.20	.....
17	5.40	6.25	7.10	8.00	9.85	11.80	13.85	16.00	18.25	.....
18	5.70	6.65	7.60	8.55	10.55	12.65	14.85	17.05	19.45	.....
19	6.05	7.05	8.10	9.15	11.35	13.55	15.90	18.35	20.90	\$23.55
20	6.40	7.45	8.55	9.65	11.95	14.35	16.85	19.45	22.15	24.95
22	7.10	8.30	9.50	10.75	13.30	15.95	18.70	21.55	24.50	27.55
24	7.90	9.25	10.60	12.00	14.85	17.80	20.85	24.00	27.25	30.60
26	8.80	10.30	11.80	13.35	16.50	19.75	23.10	26.55	30.10	33.75
28	9.80	11.45	13.10	14.80	18.25	21.80	25.45	29.20	33.05	36.90
30	10.85	12.65	14.45	16.30	20.05	23.90	27.85	31.90	36.00	40.25
32	11.95	13.90	15.85	17.85	21.90	26.05	30.30	34.70	39.20	43.80
34	13.10	15.20	17.30	19.45	23.80	28.30	32.90	37.60	42.40	47.30
36	14.30	16.55	18.85	21.15	25.85	30.70	35.65	40.70	45.85	51.10

### Price List of Split Pulleys

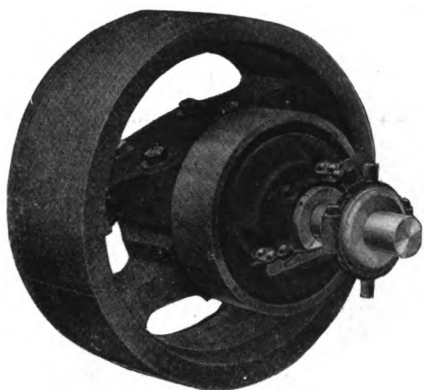
Diam. Inches	WIDTH OF FACE IN INCHES.									
	3	4	5	6	8	10	12	14	16	18
6	\$ 4.00	\$ 4.30	\$ 4.90	\$ 5.35	\$ 6.55	\$ 7.85	\$ 9.15	.....	.....	.....
7	4.20	4.55	5.25	5.70	6.90	8.15	9.50	.....	.....	.....
8	4.50	4.95	5.70	6.15	7.45	8.90	10.50	.....	.....	.....
9	4.80	5.25	6.05	6.55	7.95	9.45	11.05	.....	.....	.....
10	5.15	5.65	6.50	7.05	8.55	10.30	12.15	.....	.....	.....
11	5.40	5.95	6.85	7.65	9.05	10.80	12.75	.....	.....	.....
12	5.75	6.40	7.35	8.00	9.75	11.65	13.65	15.75	.....	.....
13	6.00	6.65	7.70	8.40	10.25	12.25	14.35	16.60	.....	.....
14	6.45	7.15	8.35	9.10	11.15	13.30	15.55	17.90	.....	.....
15	6.75	7.50	8.75	9.55	11.70	14.00	16.40	18.90	.....	.....
16	7.20	7.90	9.20	10.05	12.30	14.70	17.20	19.80	22.65	.....
17	7.50	8.35	9.70	10.60	12.95	15.50	18.05	20.80	23.65	.....
18	7.95	8.90	10.40	11.35	13.90	16.60	19.40	22.25	25.30	.....
19	8.30	9.30	10.95	11.95	14.70	17.50	20.45	23.55	26.75	30.10
20	8.85	9.90	11.60	12.70	15.60	18.65	21.80	25.10	28.50	32.05
22	9.75	10.95	12.80	14.05	17.25	20.60	24.05	27.65	31.35	35.20
24	10.70	12.05	14.15	15.55	19.10	22.80	26.60	30.55	34.60	38.80
26	11.80	13.30	15.65	17.20	21.10	25.15	29.30	33.60	38.00	42.55
28	13.05	14.65	17.25	18.95	23.20	27.60	32.10	36.75	41.50	46.30
30	14.35	16.15	18.90	20.75	25.35	30.10	34.95	39.95	45.00	50.25
32	15.75	17.70	20.65	22.65	27.60	32.70	37.90	43.30	48.80	54.45
34	17.20	19.30	22.45	24.60	29.90	35.40	41.00	46.75	52.60	59.60
36	18.70	20.95	24.40	26.65	32.35	38.25	44.25	50.40	56.65	63.05

Prices on this Page Subject to Discount.

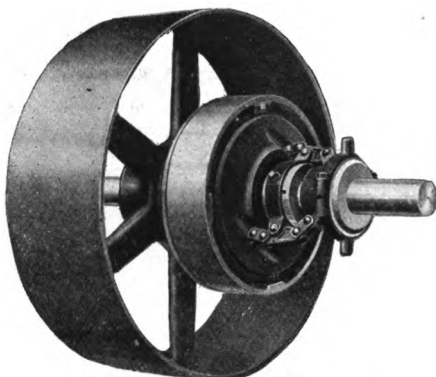


## Friction Clutches

For Clutch Pulleys and Cut-Off Shaft Couplings



**Solid Friction Clutch  
In Combination with Wood Split Pulley**



**Solid Friction Clutch  
In Combination with Solid Iron Pulley**

Independent control is the modern economic in factory management. Clutches save power and time. They do away with loose pulley nuisances, squealing of belts in shifting, and many other troubles. The clutches herewith described are standard and efficient. The same type of clutch may be used for clutch pulleys or for cut-off clutch in a line of shafting. For clutch pulley an extension sleeve is provided, to which an iron or wood pulley is clamped exactly the same as to a shaft. For cut-off coupling the sleeve is shorter and is keyed to the shaft.

**Price List of Solid Friction Clutch or Cut-Off Coupling with Multiple Friction Discs.**

Size of Clutch, Inches	Largest Bore	Horse Power at 100 R.P.M.	*Speed	Will Drive Pulley		Price
				Diam.	Face	
4	1 1/4	1 1/4	600	12	4	\$15.00
5	1 1/2	2	580	15	4	17.00
6	1 3/4	3	560	18	5	20.00
7	2	4	540	20	6	22.00
8	2 1/4	5	520	24	6	27.00
9	2 1/2	6	500	30	6	30.00
10	3	10	480	30	10	37.00
12	3	15	440	36	12	45.00
14	3 1/2	25	400	40	14	55.00
16	4 1/2	50	360	48	14	75.00

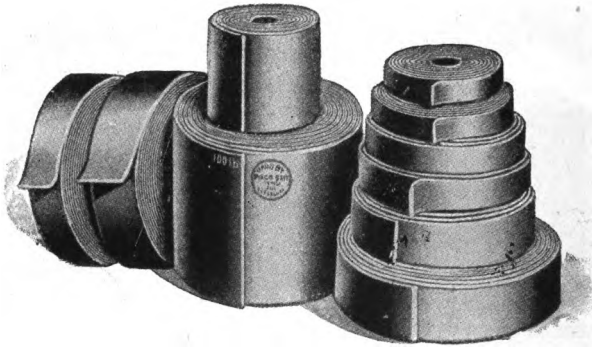
The price list as shown above applies to either clutch or cut-off coupling. In ordering, specify which is wanted. \*Speeds are for clutches regularly built for ordinary factory requirements; when desired for higher speeds than shown above, prices will be quoted upon request, accompanied by full information. The sizes of pulleys are based upon a driving tension of 42 pounds for single belt per inch of width. When this tension is exceeded, or double belt is used, a larger size clutch should be employed. Horse power is in proportion to speed of pulley. In ordering clutches give size of shaft, diameter and face of pulley, and state whether iron or wood pulley is wanted. Price does not include pulley or lever. Pulley must not be larger than listed in table, but may be smaller.

Prices Subject to Discount.

**Split Friction Clutches.** Prices and Specifications on Application.

# Belting

Leather and Rawhide



Prices of Leather Belting per Running Foot

1 in.	\$0 12	10 in.	\$2 40
1 1/8 in.	0 15	11 in.	2 64
1 1/4 in.	0 18	12 in.	2 88
1 3/8 in.	0 21	13 in.	3 12
1 1/2 in.	0 24	14 in.	3 36
1 5/8 in.	0 30	15 in.	3 60
1 3/4 in.	0 36	16 in.	3 84
1 7/8 in.	0 42	17 in.	4 08
2 in.	0 48	18 in.	4 32
2 1/8 in.	0 54	19 in.	4 56
2 1/4 in.	0 60	20 in.	4 80
2 3/8 in.	0 66	21 in.	5 04
2 1/2 in.	0 72	22 in.	5 28
2 5/8 in.	0 78	23 in.	5 52
2 3/4 in.	0 84	24 in.	5 76
2 7/8 in.	0 90	25 in.	6 00
3 in.	0 96	26 in.	6 24
3 1/8 in.	1 08	27 in.	6 48
3 1/4 in.	1 20	28 in.	6 72
3 3/8 in.	1 32	30 in.	7 20
3 1/2 in.	1 44	32 in.	7 68
3 5/8 in.	1 56	34 in.	8 16
3 3/4 in.	1 68	36 in.	8 64
3 7/8 in.	1 92	38 in.	9 12
4 in.	2 16	40 in.	9 60
		44 in.	10 56

Double belts twice the price of single. In ordering state where belts are to run. We do not guarantee belts to run on quarter turn, unless they are specially made for that purpose.

## Rawhide Belts---Same List as Above

Solid Round Belting		Twist Round Belting	
DIAM.	PRICE	DIAM.	PRICE
1-8 Inch	\$0 06	1-8 Inch	\$0 07
3-16 "	08	3-16 "	12
1-4 "	12	1-4 "	15
5-16 "	16	5-16 "	21
3-8 "	20	3-8 "	25
		1-2 Inch	\$0 35
		5-8 "	40
		3-4 "	50
		7-8 "	65
		1 "	80

Prices Subject to Discount.

## Belting

### Cotton Stitched

For use in creameries and for driving belts; has no equal. Fifty per cent cheaper, and every belt guaranteed. It is not affected by water or steam.



Width Inch	4 Ply	5 Ply	6 Ply	8 Ply	10 Ply
1	.10	....	....	....	..
1½	.15	....	....	....	....
2	.20	.25	.30	..	..
2½	.25	.31	.38	....	....
3	.30	.38	.45	....	....
3½	.35	.44	.53	..	..
4	.40	.50	.60	.80	..
4½	.45	.56	.68	.90	..
5	.50	.63	.75	1.00	....
6	.60	.75	.90	1.20	....
7	.70	.88	1.05	1.40	....
8	.80	1.00	1.20	1.60	....
9	.90	1.13	1.35	1.80	....
10	1.00	1.25	1.50	2.00	....
11	1.10	1.38	1.65	2.20	....
12	1.20	1.50	1.80	2.40	3.00
13	1.43	1.79	2.15	2.86	3.58
14	1.54	1.93	2.31	3.08	3.85

## Rubber

In Effect May 1, 1910

Inch	2 Ply	3 Ply	4 Ply	5 Ply	6 Ply	7 Ply
1	\$ .09	\$ .11	\$ .13			
1½	.11	.13	.16			
1½	.13	.15	.19	\$ .23		
1½	.15	.17	.22	.27		
2	.18	.20	.25	.31	\$ .37	
2½	.22	.25	.31	.38	.46	
3	.26	.30	.37	.45	.55	
3½	.30	.35	.43	.53	.65	
4	.34	.40	.50	.61	.75	\$ .86
4½	.38	.45	.55	.69	.84	.96
5	.42	.50	.61	.76	.91	1 .06
6	.50	.60	.72	.89	1 .08	1 .25
7	.59	.70	.84	1 .04	1 .25	1 .46
8	.67	.80	.96	1 .19	1 .44	1 .68
9	.76	.90	1 .07	1 .34	1 .60	1 .88
10	.84	1 .00	1 .20	1 .49	1 .77	2 .09
11	.92	1 .10	1 .32	1 .63	1 .96	2 .29
12	1 .00	1 .20	1 .43	1 .78	2 .15	2 .50
13	1 .10	1 .30	1 .56	1 .95	2 .34	2 .73
14	1 .19	1 .40	1 .69	2 .11	2 .54	2 .96
15	1 .28	1 .52	1 .83	2 .28	2 .74	3 .19
16	1 .37	1 .65	1 .96	2 .44	2 .94	3 .42
18	1 .55	1 .87	2 .22	2 .77	3 .33	3 .88
20	1 .74	2 .09	2 .49	3 .10	3 .73	4 .35

**Endless Belts**—These are made to order. Three extra feet will be charged for the splice, subject to the regular discount. This applies to both rubber and cotton stitched belting.

## Balata Belting

Made of cotton duck impregnated with Balata Gum while under tension. It is the ideal belt for creamery and dairy use. It is water, grease and steam-proof. Will not stretch or slip. Three-ply is stronger than best single leather; other plies in proportion. Following is standard and uniform list adopted by the Balata belting manufacturers of the United States. Effective March 15, 1911.

Width	3 Ply Per ft.	4 Ply Per ft.	5 Ply Per ft.	6 Ply Per ft.	Width	3 Ply Per ft.	4 Ply Per ft.	5 Ply Per ft.	6 Ply Per ft.
1 in.	\$ .18	\$ .24	\$ .30	.....	4 1/4"	\$ .86	\$1.14	\$1.43	\$1.71
1 1/8"	.23	.30	.38	.....	5	.90	1.20	1.50	1.80
1 1/2"	.27	.36	.45	.....	5 1/2"	.99	1.32	1.65	1.98
1 3/4"	.32	.42	.53	\$ .63	6	1.08	1.44	1.80	2.16
2	.36	.48	.60	.72	6 1/2"	1.17	1.56	1.95	2.34
2 1/4"	.41	.54	.68	.81	7	1.26	1.68	2.10	2.52
2 1/2"	.45	.60	.75	.90	8	1.44	1.92	2.40	2.88
2 3/4"	.50	.66	.83	.99	9	1.62	2.16	2.70	3.24
3	.54	.72	.90	1.08	10	1.80	2.40	3.00	3.60
3 1/4"	.59	.78	.98	1.17	11	1.98	2.64	3.30	3.96
3 1/2"	.63	.84	1.05	1.26	12	2.16	2.88	3.60	4.32
3 3/4"	.68	.90	1.13	1.35	13	.....	.....	3.90	4.68
4	.72	.96	1.20	1.44	14	.....	.....	4.20	5.04
4 1/4"	.77	1.02	1.28	1.53	15	.....	.....	4.50	5.40
4 1/2"	.81	1.08	1.35	1.62	16	.....	.....	4.80	5.76

Other widths and plies at proportionate prices.

### Rules for Calculating Speed of Pulleys

1. The diameter of the driver and driven being given, to find the number of revolutions of the driven:

Rule—Multiply the diameter of the driver by its number of revolutions, and divide the product by the diameter of the driven; the quotient will be the number of revolutions.

2. The diameter and the revolutions of the driver being given to find the diameter of the driven, that shall make any given number of revolutions in the same time:

Rule—Multiply the diameter of the driver by its number of revolutions, and divide the product by the number of revolutions of the driven; the quotient will be its diameter.

3. To ascertain the size of the driver:

Rule—Multiply the diameter of the driven by the number of revolutions you wish to make, and divide the product by the revolutions of the driver; the quotient will be the size of the driver.

### Belts.

Leather belts must be protected against water, and even moisture:

It is desirable to run the grain (hair) side of leather belts on the pulley, in order that the strongest part of the belt may be subject to the least wear.

Leather belts run with grain side to the pulley will drive 30 per cent more than if run with flesh side. The belt, as well as the pulley, adheres best when smooth, and the grain side adheres best because it is smoothest.

The transmitting power of a double belt is to that of single belt as 10 to 7. In ordering pulleys, the kind of belt to be used should always be specified.

Belts should be kept soft and pliable. For this purpose, use a good dressing.

The motion of driving should run with and not against the laps of the belt.

If too great a distance is attempted, the weight of the belt will produce a very heavy sag, drawing so hard on the shaft as to produce great friction in the bearings, while at the same time the belt will have an unsteady, flapping motion, which will destroy both the belt and machinery.

If possible to avoid it, connected shafts should never be placed one directly over the other, as in such case the belt must be kept very tight to do the work. For this purpose belts should be carefully selected of well stretched leather.

It is desirable that the angle of the belt with the floor should not exceed 45. It is also desirable to locate the shafting and machinery so that belts should run off from each shaft in opposite directions, as this arrangement will relieve the bearings from the friction that would result when the belts all pull one way on the shaft.

The diameter of the pulleys should be as large as can be admitted.

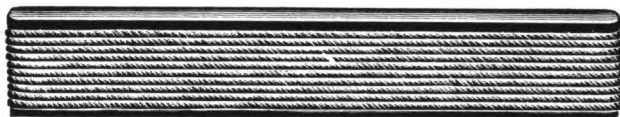
The pulley should be a little wider than the belt required for the work.

### Rule for Finding Length of Belts.

Having properly arranged the machinery for the reception of the belts, the next thing to be determined is the length and width of the belts.

When it is not convenient to measure with the tape-line the length required, apply the following rule: Add the diameter of the two pulleys together, divide the result by 2, and multiply the quotient by 3 1/4, then add this product to twice the distance between the centers of the shafts, and you have the length required.

## Separator Rope Belts



These belts are thoroughly well made of a good quality of rope with good length splices. Stock lengths are 14 ft., 17 ft. 4 in., 17 ft. 7 in., and 17 ft 9 in.

Stock lengths, any length in less than dozen lots..... per doz., \$8.00  
 Dozen lots or over..... per doz., 7.50  
 Odd lengths, in dozen lots only..... per doz., 9.00

## The "Victor Splice" Belt

This belt is superior to anything else on the market. The ends of the strands in the splice are so knotted together that the belt cannot ravel unless the strands are cut, or worn through. In fact, the splice is stronger than the rest of the belt.

Stock lengths, any length less than doz. lots..... per doz., \$8.50  
 Dozen lots or over ..... per doz., 8.00  
 Odd lengths in dozen lots only..... per doz., 10.00

## Perfection Flat Cotton Belts

For "Reid Overflow," and "Old Style" Danish-Weston, "United States," "Alexandria," "Jumbo," and "De Laval" Separators.

Our 1-inch flat belt presents its full width to surface of pulley and weighs only 9-16 lb.; whereas, the standard size rope belt, namely,  $\frac{3}{8}$ -inch, presents only  $\frac{1}{4}$ -inch surface to pulley, and weighs  $\frac{3}{4}$  lb.

Belt running over pulleys of small diameter at high speed ought to be as thin and wide as possible.

Reid & Springer	19 ft. 3 in. x 1½ in.	\$2.50	United States,	18 ft. 2 in. x 1½ in.	\$2.25
	19 ft. 4 in. x 1½ in.	2.50	Jumbo,	17 ft. 6 in. x 1¼ in.	2.25
	19 ft. 6 in. x 1½ in.	2.50		18 ft. x 1¼ in.	2.25
	19 ft. 3 in. x 1¾ in.	3.00		18 ft. 6 in. x 1¼ in.	2.25
	19 ft. 4 in. x 1¾ in.	3.00	Alpha,	17 ft. 4 in. x 1 in.	3.00
	19 ft. 6 in. x 1¾ in.	3.00		17 ft. 7 in. x 1 in.	3.00
	19 ft. 3 in. x 2 in.	3.50		17 ft. 10 in. x 1 in.	3.00
	19 ft. 4 in. x 2 in.	3.50			
	19 ft. 6 in. x 2 in.	3.50		For all special lengths add 25c.	
				For all special widths add 25c.	

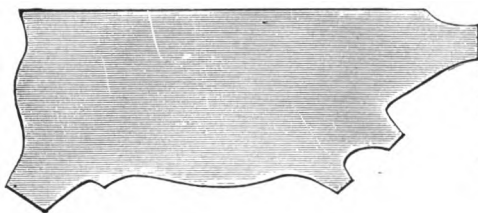
## Pulleys for Flat Belts

Where the flat belts described above are used an Alpha Separators it is necessary to equip separator, intermediate and belt tightener with special pulleys having flat faces. These will be furnished at the following prices:

Flat pulley for Alpha intermediate.....\$2.50  
 Flat pulley with flange for Separator Spindle..... 2.50  
 Flat pulley for tightener..... 2.00

## Belt Lacing, Etc.

### Rawhide Lace Leather Sides



Our rawhide lace leather is unexcelled in color and finish, and is very tough, retaining its strength even after being on hand for a long time. Every side is marked plainly with the number of square feet that it contains.

#### Price

Best quality rawhide, per square foot .....40

### Lace Cutters

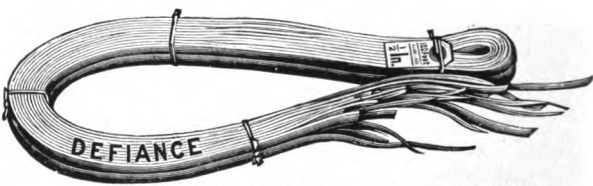
Adjustable to Cut Any Width

Price, each .....Net \$ .50    Extra knives, each....Net \$0.15

### Cut Lacing

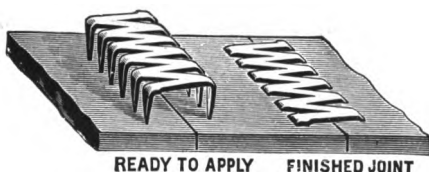
Per Bunch of 100 Feet

1/4	Inch Wide	.....\$1.25
1/2	"	.....1.50
3/4	"	.....1.75
1	"	.....2.25
1 1/4	"	.....3.00
1 1/2	"	.....3.75
1 3/4	"	.....5.00



Packed 100 inches in a box, assorted Lengths.

No.	For	Per box.
0	For split and light leather belts..	\$1.00
1	For ordinary single leather belts..	1.50
2	For extra heavy and wide single leather belts .....	2.00
3	For light double leather belts....	2.50
4	For heavy double leather belts...	3.00
10	For 2-ply rubber and cotton belts	1.10
11	For 3-ply rubber and cotton belts	1.65
12	For 4-ply rubber and cotton belts	2.20
13	For 5-ply rubber and cotton belts	2.75
14	For 6-ply rubber and cotton belts	3.30



### Bristol Steel

### Kerr's Metallic Lacing

A specially manufactured wire lacing especially adapted to lacing belts on rapid running machinery. Lasts longer than leather lacing and is easy to use. Price per foot .....Net, \$0.02  
Awls for metallic lacing, each..... .85

### Belt Hooks

#### "Covel"

No. 1,	3/4-inch for light belts, per 1000.....	\$1.75
No. 2,	3/4-inch for heavy belts, per 1000.....	2.00
No. 3,	1-inch for light belts, per 1000.....	2.25
No. 4,	1-inch for heavy belts, per 1000.....	2.50

Put up 200 in a box.



### Flexible Belt Lacing

Made of steel hinged with rawhide pin. Flexible joint insures perfect contact with pulleys. No tools required excepting a hammer. Packed in boxes as follows:

No. 25 for Belts 3-16 to 1-4 of an inch thick:

Box No.	Width of Lacing	Total Width of Belt	Weight	Price Per Box
F	8 in.	48 in.	1 1/4 lbs.	\$1.00
G	12 in.	96 in.	2 1/2 lbs.	2.00

Extra rawhide pins, 12 in. long, 3/4 in., for No. 25, per doz.....\$0.45

No. 32 for Belts 1-4 to 5-16 inch thick.

Box No.	Width of Lacing	Total Width of Belt	Weight	Price Per Box
M	8 in.	32 in.	1 1/2 lbs.	\$1.00
N	12 in.	48 in.	2 lbs.	1.50

Extra rawhide pins, 12 in. long, 5-36 in., for No. 32, per doz.....\$0.50

## Belt Awls



Should always be used when lacing rubber or cotton belts.  
Common (like illustration), ea. \$0.50  
Lathrop's Patent ..... .75

## Belt Punches

Revolving Spring. Extra cast steel, with four tubes, each.....\$1.25  
Common Round, cast steel, drilled, reamed and oiled tempered, each..... .25  
Nos. 5, small; 7 medium, and 9, large. Always give number in ordering.

## Belt Paste

Price, 5-lb. boxes, per lb. .... \$0.30  
Price, 10-lb. boxes, per lb. .... .25

## Speed Indicator

Can be carried in the pocket; is nicely finished and, above all, is accurate.

To ascertain the number of revolutions of any shaft in a given time, place the point of the indicator in the center of the shaft; for every 100 revolutions the dial will revolve once.

Price ..... \$1.00



## Emery Cloth

		Per quire.	Per sheet.
No. 00, 0, ½	Very Fine	\$1.33	\$0.10
No. 1	Fine	1.43	.10
No. 1½	Fine	1.48	.10
No. 2	Medium	1.54	.10
No. 2½	Coarse	1.65	.10
No. 3	Very Coarse	1.76	.10

## Crocus Cloth

For cleaning Separator Spindles.....per sheet, \$0.10

## Babbitt---Frictionless

This is an eminently superior bearing Metal. About 5 pounds to the Cake.

### Prices

In 20-lb. boxes.....per lb. \$  
In small lots .....per lb. .

Write for Prices.

## Babbitt Ladles

Diameter	.....inches.	2½	3	3½	4	5	6
Price	.....	\$0.30	.35	.40	.50	.70	.85

## Cotton Waste

		100 lb. bales.	Small lots.
White	.....per lb.	.....	.....
Colored	.....per lb.	.....	.....

Write for Prices.

## Roller Flue Expander



### Class "A"

#### Sizes and Prices

Diameter, inches..	1	1 1/4	1 1/2	1 3/4	2	2 1/4
Price, each.....	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00	\$10.00
Diameter, inches..	2 1/2	3	3 1/4	3 1/2	4	4 1/4
Price, each.....	\$12.00	\$14.00	\$16.00	\$18.00	\$20.00	\$23.00
Diameter, inches..	4 1/2	5	5 1/4	5 1/2	6	6 1/4
Price, each.....	\$25.00	\$30.00	\$35.00	\$40.00	\$50.00	\$60.00

The above sizes given are for outside dimensions of tubes.

### Beading Tools

Price for either large, medium or small flues.....each, \$0.75

### Calking Tools

Price .....each, \$0.50

### Coal Scoops

Cast steel, extra heavy.....each, \$2.00

### Pokers

Straight.....\$1.00 Bent.....\$1.00

## Lubricating Oils

For Separators, Engines and Refrigerating Machines

Per Gallon

World's Fair Separator.....	\$.....
Imperial Separator.....	\$.....
Reliance Engine.....	\$1.00
Extra Castor.....	\$.....
Tiger Cylinder.....	\$.....
Zero, for Refrigerating Machines.....	\$.....

Lard Oil and Linseed Oil at market prices.

Write for Prices or see our Price Current.

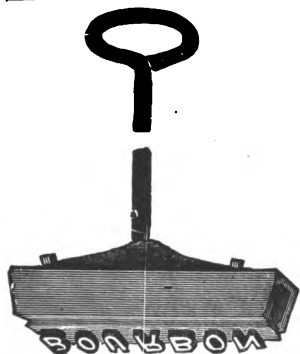
### Spun Zinc Oilers

No.	Diameter of Bottom, Inches	Price, Tin Bottoms	Price, Brass Bottoms
1	2 5/8	\$0.15	\$0.20
2	3 1/4	.20	.25
3	3 3/4	.25	.30
4	4 1/4	.30	.35
5	4 1/2	.35	.40

### Steel Oilers

With brazed steel bottoms and cold rolled tubes. Copperized finished.

No.	Diameter of Bottom, Inches	Price
12	2 3/4	\$0.45
13	3 3/8	.55
14	3 3/4	.75
15	4 1/4	.95
16	4 3/4	1.00



## Hanson's Improved Burning Brand

For marking boxes, barrels, kegs, tubs and wooden articles of every description.

### Brands, With Name, Complete

Includes handle 16 inches long.

	1/4 in.	3/8 in.	1/2 in.
Brands of 4 letters.....	\$1.00	\$1.00	\$1.00
Additional letters.....	.15	.20	.25

### Single Letters

1/4 in., each 8c; 3/8 in., each, 9c; 1/2 in., each, 10c.

Solid Iron Brands, 45c per lb.; 25c per letter.

Solid Copper Brands, 40c per lb.; 25c per letter.



# Pipe Tongs

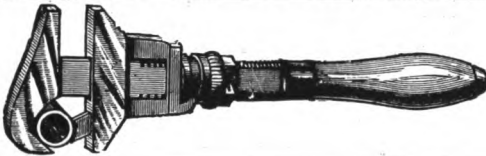
"Brown's" Adjustable



Number	1	1½	2	3	4	5
Takes pipe from	½ to 1	¾ to 1	1 to 1½	1 to 2	1½ to 3	2½ to 4
Price, each	\$1 20	\$1 60	\$1 70	\$2 40	\$5 40	\$12 00

"Common"

Sizes, inches	½	¾	1	1½	2	2½
Price, each	\$0 60	\$0 65	\$0 70	\$0 75	\$0 90	\$2 50

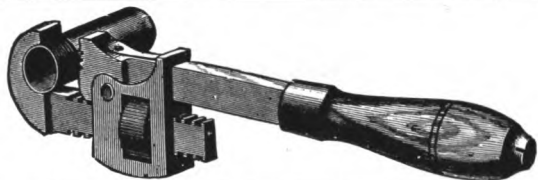


# Pipe Wrenches

"Bemis & Call's" Combination Pipe and Nut

Length, inches	8	12	15
Takes pipe, inches	¼ to ¾ in.	¼ to 1½ in.	¼ to 2 in.
Price, each	\$2 30	\$2 85	\$4 00

"Stilson's" Patent



Length, inches	6	8	10	14	18	24	36
Size pipe, inches	½ to 1	¾ to 1	1 to 1½	1 to 1½	1 to 2	1 to 2½	1 to 3½
Price, each	\$2 00	\$2 00	\$2 25	\$3 00	\$4 00	\$6 00	\$12 00
Jaws	75	75	80	1 00	1 33	2 10	4 75
Frames	35	35	40	50	55	80	1 30
Nuts	11	11	14	17	22	35	55
Handle	15	15	20	25	30	40	70



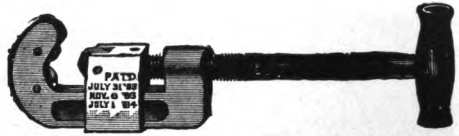
"Trim-A-Way"

Length, inches	6	8	10	14	18	24
Takes pipe, inches	½ to 1	¾ to 1	1 to 1½	1 to 1½	1 to 2	1 to 2½
Price, each	\$2 00	\$2 00	\$2 25	\$3 00	\$4 00	\$6 00
Jaws	67	67	75	1 00	1 33	2 00
Inserted jaws	25	25	33	50	55	65
Nuts	20	20	27	35	42	50
Frames	25	25	33	45	55	65

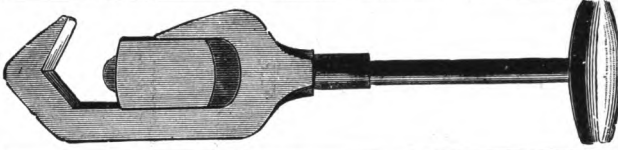
Write for Discounts.

## Pipe Cutters

### The "Barnes" Pipe Cutter



Numbers.....	1	2	3	4	5
Cuts pipe from.....	$\frac{1}{8}$ to 1	$\frac{1}{8}$ to 2	$1\frac{1}{2}$ to 3	$2\frac{1}{2}$ to 4	4 to 6
Complete cutter, each.....	\$4 50	\$6 00	\$10 00	\$20 00	\$30 00
Extra wheels.....	25	30	40	50	75
" wheel pins, ".....	10	10	10	20	20



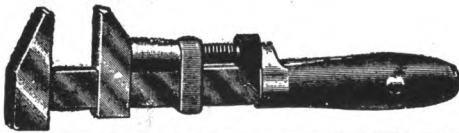
### The "Stanwood" Pipe Cutter

Numbers.....	1	2	3
Cuts pipe from.....	$\frac{1}{8}$ to 1	1 to 2	2 to 3
Complete cutter, each.....	\$1 50	\$2 25	\$7 00
Cutter wheels,.....	12	18	25
" blocks and wheels, each.....	40	60	1 00
Pins, each.....	05	05	08

### The "Saunders" Pipe Cutter



Numbers.....	1	2	3
Cuts pipe from.....	$\frac{1}{8}$ to 1	1 to 2	2 to 3
Price, each.....	\$3 00	\$4 50	\$11 00
Extra blocks and wheels, each.....	1 25	1 75	2 75
" wheels, each.....	24	32	60
" rollers,.....	24	32	50
" pins, ".....	10	10	15

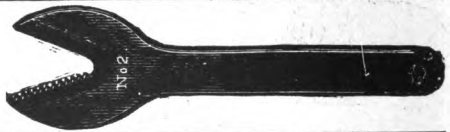


## Wrenches

### Coe's Monkey Wrench

Size, inches.....	6	8	10	12	15	18	21
Price, black, each.....	\$0 80	\$0 85	\$1 00	\$1 15	\$2 00	\$2 50	\$3 00
Polished.....	85	95	1 15	1 35	2 25	2 65	3 25

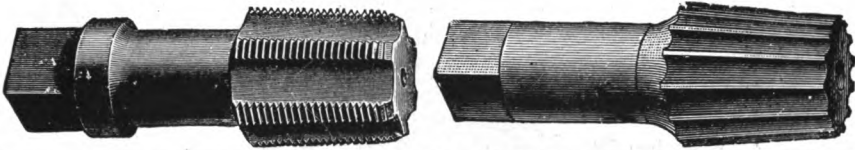
### "Alligator" Wrenches



Numbers.....	1	2	3	4	5
Holds pipe from.....	$\frac{1}{8}$ to $\frac{3}{4}$	$\frac{3}{8}$ to $\frac{3}{4}$	$\frac{1}{2}$ to $1\frac{1}{4}$	$1\frac{1}{4}$ to 2	2 to 3 in.
Holds round iron from.....	$\frac{1}{4}$ to $\frac{3}{4}$	$\frac{1}{2}$ to 1	$\frac{1}{2}$ to $1\frac{1}{4}$	$1\frac{1}{2}$ to $2\frac{1}{2}$	$2\frac{1}{4}$ to $3\frac{1}{2}$ in.
Length, inches.....	5 $\frac{1}{2}$	10	16	22	27
Price, each.....	\$0 35	\$1 00	\$2 00	\$3 00	\$4 50

Write for Discounts.

## Pipe Taps and Reamers



Size, inches .....	$\frac{3}{8}$	$\frac{1}{4}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	1	$1\frac{1}{4}$	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Pipe Tap .....each,	\$1.12	1.25	1.50	1.87	2.50	3.12	3.75	4.62	6.25	10.50	15.00
Pipe Reamer.....each,	\$1.12	1.25	1.50	1.87	2.50	3.12	3.75	4.62	6.25	10.50	15.00



**The "Combination"**

No.....	87	88	$88\frac{1}{2}$	$89\frac{1}{4}$
Holds pipe from, inches	$\frac{1}{8}$ to 2	$\frac{1}{8}$ to 3	$\frac{1}{8}$ to 4	$\frac{1}{8}$ to 6
Price, each .....	\$16.00	20.00	28.00	35.00

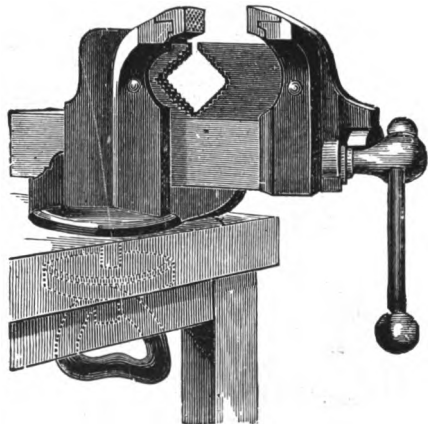
## Pipe Vises

The "Malleable"

With Hinge

Sizes and Prices

No. 1	holds pipe from $\frac{1}{8}$ to 2 inches.	Price, \$10.00
2	" " " " $\frac{1}{8}$ to 3	" 14.00



## Reed's Gas Pliers

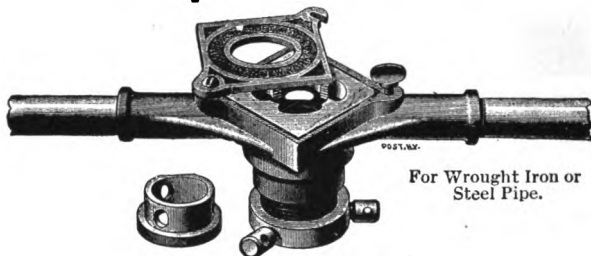


Combined Plier, Wire Cutter and Screw Driver

	List	Black	Nickel
6-inch, per dozen .....		\$13.50	\$15.00
8 " " .....		16.00	18.00
10 " " .....		18.00	21.00

## Die Stocks

### Gas Pipe—"Ashcroft Standard"



For Wrought Iron or  
Steel Pipe.

Sizes and Prices

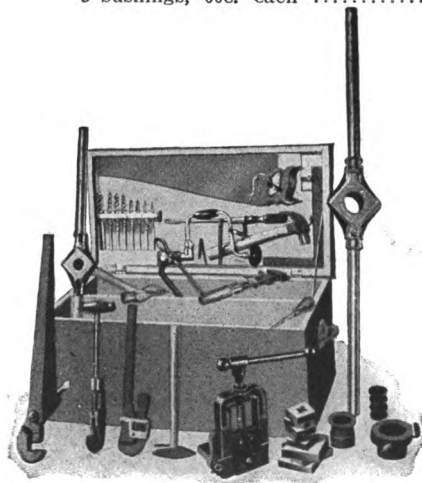
Numbers .....	0	1	1½	1¾	2	3
Pipe sizes of dies, inches, (furnished with each Stock)	¾, 1, 1½, 2	1, 1½, 2, 2½	1½, 2, 2½, 3	2, 2½, 3, 3½	2½, 3, 3½, 4	3, 3½, 4, 4½
Dimensions of dies, inches	2x½	2½x¾	3x¾	3x¾	4x¾	5x1¼
Stocks, complete, with dies	\$9 50	\$15 00	\$13 50	\$13 50	\$20 00	\$43 00
Stocks only	3 50	5 00	6 00	6 00	9 50	25 00
Extra dies, right or left hand	1 50	2 00	2 50	2 50	3 50	9 00
" bushings	25	35	45	45	60	1 00
" die frames	25	30	40	40	50	60

**Note.**—With our No. 2 stocks 4x¾ dies are always sent unless otherwise ordered. Nos. 2 and 3 stocks have leader screw attachment.

Following is a complete set and prices of extras used in making-up an Ashcroft Standard Gas Pipe Die Stock, from ¾ to 2 inches.

1 No. 2 die stock .....	\$20.00
1 die frame .....	.50
5 dies, \$2.00 each .....	10.00
5 bushings, 60c. each .....	3.00

\$33.50



## Butter-Makers' Tool Chest

In fitting up this tool chest we have tried to include all the tools that will be found useful around a creamery. The list will be found to contain just about the usual outfit included in the equipment of a first-class creamery plant. In most creameries these tools will be found scattered from one end of it to the other. As a result, when a tool is wanted it cannot be found. When found it is rusty and out of order. When kept in this chest the tools will always be easy to locate, and will be kept in good condition. The chest is nicely finished and painted to correspond to our other creamery goods. We make no charge for the chest. Our price covers just the regular prices of the goods included in the outfit.

### List of Tools and Price

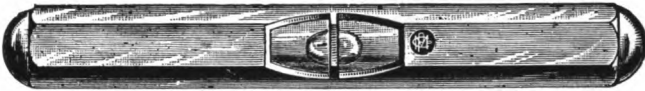
1 12-inch Square.	1 12-inch Coes Monkey Wrench.	1 Riveting Hammer.
1 Barber Brace.	1 18-inch Stillson Wrench.	1 Hatchet.
1 No. 2 Stock and Dies.	1 No. 1 Malleable Pipe Vise.	1 6-inch Cold Chisel.
1 No. 1 Stock and Dies.	1 24-inch Cross-Cut Saw.	1 12-inch Hack Saw.
1 No. 2 Barnes Pipe Cutter.	1 18-inch Screw Driver.	1 No. 3 Barnes Pipe Tongs.
		1 Set 8 Bits.
		1 Claw Hammer.

Price, complete with Chest.....\$45.00

## Handy Tools

### "Hexagon" Pocket Level

Nickel Plated



An indispensable article for creamerymen. Can be used to advantage for leveling separators, separator bowls, separator jacks, shafting, etc.

Separator bowls should be leveled often.

Price

No. 000. 3¼ inches long.....each, \$0.40

### Iron Level and Plumb



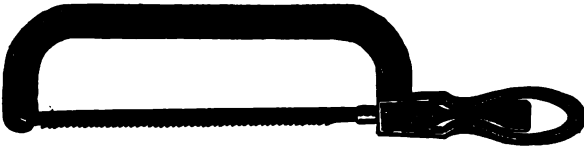
No. 12

This is a very handy article about a factory, and especially designed for those doing their own carpenter work, as it embodies two tools in one.

Sizes and Prices

No. 1. 6 inches long, ornamented iron.....each, \$2.00  
 2. 12 ..... 2.50

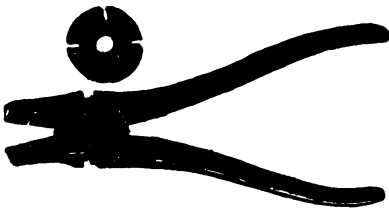
### Starrett's Hack Saw



For sawing metal, such as separator spindles, shafting, etc. A very handy tool about a factory. Each saw complete with one dozen blades.

Price

12-inch blade.....each, \$1.25



### "Acme" Combined Pliers and Wire Cutters

Solid Steel With Removable Cutters

This tool will be found very handy to factorymen.

Sizes and Prices

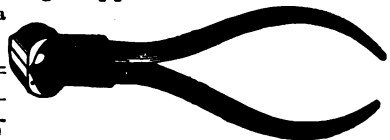
Inches long.....	6	8	10
Cuts wire not larger than.....	11	8	6
Each.....	\$1.00	\$1.25	\$2.00

### Solid Steel End-Cutting Nippers

No factoryman's kit of tools is complete without a pair of good nippers.

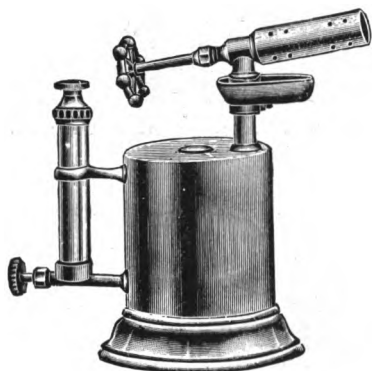
Sizes and Prices

No.....	140	150
Inches long.....	5	6
Each.....	\$0.75	\$1.00



## Soldering Supplies

### Hot Blast Gasoline Torch



Polished Brass.

In erecting sanitary piping a torch of good heat producing quality is required in order to sweat the joints smoothly and securely.

This torch is one of the best heat producers of any torch of its kind, and will be found excellent for outside work in the wind, as well as for inside use. The tank is heavy 18-gauge brass, with brass bottom which serves as a funnel in filling. The style of filler plug used is an improvement over all other makes, as a specially prepared lead washer is recessed into the filler plug which replaces the old style leather washer and is indestructible. The air valve screw is made with neat fibre handle, and with packing nut, which makes it absolutely air tight. A

strictly high grade torch in every respect and capable of producing 2000 degrees of heat.

### Attachment for Holding Soldering Copper Furnished.



Attachment for holding soldering copper furnished with each No. 212 torch without additional charge. They are packed loose and can be applied easily and securely to the burner.

#### Specifications and Prices No. 212 Torch

Capacity .....one quart  
Height, over all.....9¾ inches  
Diameter .....4 inches.  
Net weight .....3 lbs.

Shipping weight......5 lbs.  
Consumption.....½ pint per hour  
Price, net.....\$3.25

### Star Soldering Paste

This compound takes the place of all other soldering flux and is more convenient to use. Does not weaken or deteriorate with age. Simply apply a little of the paste to the surface to be soldered. Put up in 2-oz. cans.

Price, per can.....\$0.25



### Solder

We furnish guaranteed fifty-fifty solder in bars, triangles or wire at market prices. For sanitary pipe and fittings the wire solder is most convenient, as it can be cut in lengths to fit around the pipe; then, by applying the torch, the solder melts and fills the space between tube and fitting, making a perfect job with little trouble.

### Soldering Coppers

Can furnish any size or style wanted.

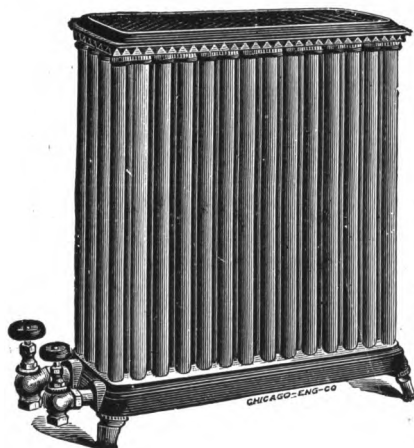
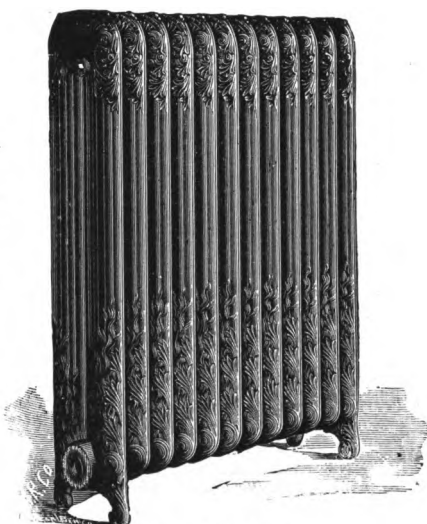
3-lb. size, \$0.90; 4-lb. size, \$1.20; 5-lb. size, \$1.50; 6-lb. size, \$1.80; 8-lb. size, \$2.40.

# Radiators

## Cast Iron

These Radiators all have a uniform width of 7½ inches in body and 9½ inches at foot.

Heating surface in each radiator section.	Steam. Price, per foot.	Hot water Price, per foot.
38 inches high, 4 feet ..	\$0 42	\$0 42
32 " " 3½ " ..	46	46
26 " " 2½ " ..	50	50
23 " " 2½ " ..	53	53
20 " " 2 " ..	57	57



## Wrought Iron

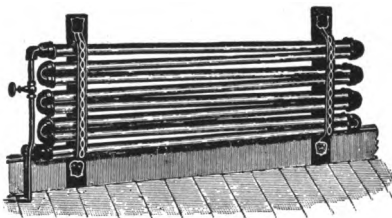
These radiators are quite expensive and seldom used at present. We can supply them if desired.

Two rows.	Length.	Height inches.	Width inches.
8 tubes 2x 4 . . . .	11½ in.	34½	6½
12 " 2x 6 . . . .	1 ft. 3½ "	34½	6½
16 " 2x 8 . . . .	1 " 7½ "	34½	6½
20 " 2x10 . . . .	2 " "	34½	6½
24 " 2x12 . . . .	2 " 1½ "	34½	6½
32 " 2x16 . . . .	3 " "	34½	6½
40 " 2x20 . . . .	3 " 9½ "	34½	6½
48 " 2x24 . . . .	3 " 5½ "	34½	6½
56 " 2x28 . . . .	5 " 2½ "	34½	6½
64 " 2x32 . . . .	5 " 10½ "	34½	6½

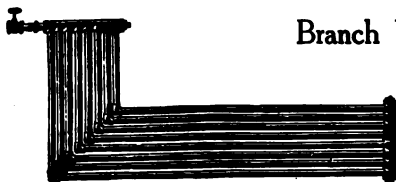
Prices quoted on application.

6 PIPES HIGH			8 PIPES HIGH		
Length in feet	Price, per foot 2 pipes wide	Price, per foot 1 pipe wide	Length in feet	Price, per foot 2 pipes wide	Price, per foot 1 pipe wide

## Bracket Coil



These coils are made to order. Prices quoted on application.



## Branch Wall Radiator

The accompanying cut shows our Branch Wall Radiator. This has a perfect drain and is an excellent and inexpensive heater. It contains 8 pipes.

Prices quoted on application.

No valves furnished with any radiators or steam coils.

# Milk Wagons

## Low-Down, Short-Turn.

We have sold a very large number of the Low-down, Short-turn Wagons, illustrated on the following pages, and our experience warrants us in giving them our strongest recommendation. For general purposes the "Low-down" is to be preferred, as the floor is only twenty-three inches from the ground. Our three-spring and platform spring wagons are also popular and give the best of satisfaction. The quality of material and workmanship are of the very best, and we call your attention to the following general description of our wagons:

**BODY:** High grade; each piece of stock carefully selected. All bodies have oak bottom for strength and durability. Frame is of ash and oak; panels properly fitted and screwed, all joints coated with lead and oil. Roof arms, base boards and panels selected whitewood. Entire body substantially bolted, ironed and braced. Frame posts at side door openings bound with bevel edge steel. Handles at side door openings. Side doors operate on roller hangers, carefully fitted to round edge steel track, and are provided with light springs at the bottom to hold them in position and prevent rattling. Front windows, when furnished, have two lights, are hinged at the top, and swing in against roof, entirely out of the way when open. Line hook in roof which also serves as front window catch. All glass is AA double strength, set in putty and molded on inside. Transoms in back, when furnished, are fitted with jointed elbow hinge and can be held in any position. Hardwood roof bows covered with beaded ceiling over which is stretched heavy sail duck, thoroughly oiled and painted so as to be waterproof.

**AXLES:** Low-down, short-turn gears, have genuine steel axle with dug-out collar and coaxed bed. Other styles, Half Patent or Concord Express axles. Timken roller bearing axles at an extra charge.

**WHEELS:** Sarven patent, of selected second growth hickory. All except 1-inch tread have riveted rims each side of spokes; 1-inch have screwed rims.

**TIRES:** Round edge steel tires, larger than other makers use.

**SPRINGS:** High-grade, oil-tempered, of ample capacity for load; ribbed where necessary.

**PAINTING:** All done in lead and oil and applied with a brush, ample time being given to dry between coats. Choice of colors given.

**LETTERING:** An extra charge is made for lettering and special designs, according to the expense of doing the work. Competent artists are employed. We are prepared to reproduce special designs, trade marks, monograms, etc., and faithfully follow sketches submitted. Can furnish lettering in gold leaf, silver leaf, or fancy painted letters.

## Special Information

**WIDTH OF TRACK:** Be sure to state width of track wanted. Narrow track is 4 feet 8 inches; wide track, 5 feet 2 inches.

**CRATING:** All wagons carefully crated in closest possible space to protect them in shipment.

**WARRANTY:** Every wagon warranted as described. Any defect in material or workmanship developed within one year will be made good. This does not cover loose tires, wagon loaded beyond rated capacity or damage to paint or varnish by exposures.

## Instructions for Ordering

- |  |   |
|--|---|
| 1. Catalog number of wagon.                | 5. Brake, with or without hand or foot lever. |
| 2. Size axle.                              | 6. Colors for painting body and gear.         |
| 3. Width of track, whether wide or narrow. | 7. Lettering, if wanted.                      |
| 4. Pole or shaft, or both.                 |   |

## Time Required to Ship

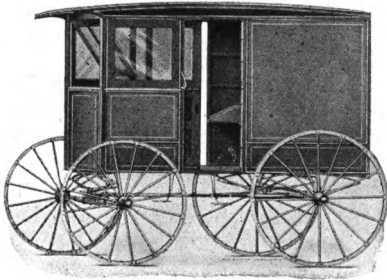
All wagons being built to order. It requires from three to five weeks to make shipment from factory in Northern Illinois.

## Extras

Pole in place of shafts. Pole in addition to shafts. Gong. Brake. Lettering. Can bench. Timken roller bearing axles. Bottled milk system, as described on pages 410 to 412.



# Milk Wagons



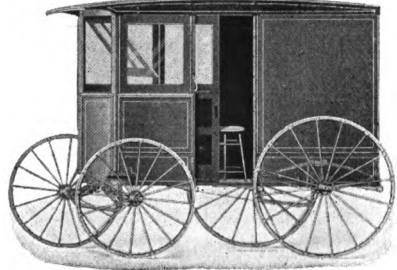
Style 29.

Three-spring, short-turn, panel side. Body 30 inches from ground. Width of side doors, 18 inches. Rear door 37 inches high. Front window (two light) hinged at top, swings out of the way when open. Two panel doors in rear, with glass transom overhead. Can furnish stool, hinged seat entire width, single or double box seat, as ordered. Front wheels, 38 inches; rear wheels, 42 inches. Body is 42 inches wide by 7 feet long. Can furnish longer bodies on 1¼ inch and larger axles.

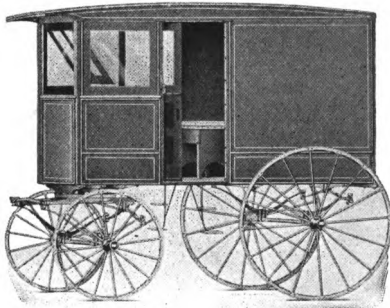
No.	Axles	Tire	Weight	Capacity
29-A	1 1/8"	1 1/8x3/8	800 lbs.	1000 lbs.
29-B	1 1/4"	1 1/4x7/16	850 lbs.	1200 lbs.
29-C	1 3/8"	1 3/8x1/2	925 lbs.	1500 lbs.
29-D	1 1/2"	1 1/2x1/2	1050 lbs.	2000 lbs.

Style 30.

Low-down, short-turn, panel side. Body only 23 inches from ground. Side door 18 inches. Rear door 42 inches high. Front window (2lights) hinged at top to swing out of way. Two panel doors in rear, with glass transom overhead. Can furnish stool, full width hinged seat, or single or double box seat, as ordered. Front wheels, 37 in., rear 46 in. Body, 37 in. wide by 7 feet long. Body on wide track gear can be 42 inches wide at an extra charge. Can also furnish longer bodies with 1¼ inch and larger axles.



No.	Axles	Tire	Weight	Capacity
30-A	1 1/8"	1 1/8x3/8	800 lbs.	1000 lbs.
30-B	1 1/4"	1 1/4x7/16	850 lbs.	1200 lbs.
30-C	1 3/8"	1 3/8x1/2	925 lbs.	1500 lbs.
30-D	1 1/2"	1 1/2x1/2	1050 lbs.	2000 lbs.



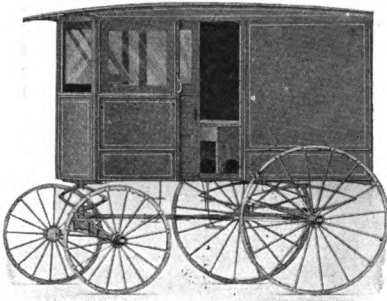
Style 31.

Three-spring, cut under, panel side. Body 38 inches from ground. Side door 18 in. high. Two panel doors in rear 37 inches high, with glass transom overhead. Can furnish stool, full width hinged seat, or single or double box seat, as ordered. Wheels, front, 34 inches; rear 44 inches. Body 7 feet long by 42 inches. Can furnish longer body in all except 1½ inch axles.

No.	Axles	Tire	Weight	Capacity
31-A	1 1/8"	1 1/8x3/8	800 lbs.	1000 lbs.
31-B	1 1/4"	1 1/4x7/16	850 lbs.	1200 lbs.
31-C	1 3/8"	1 3/8x1/2	925 lbs.	1500 lbs.
31-D	1 1/2"	1 1/2x1/2	1050 lbs.	2000 lbs.

Write for Special Wagon Catalog.

## Milk Wagons



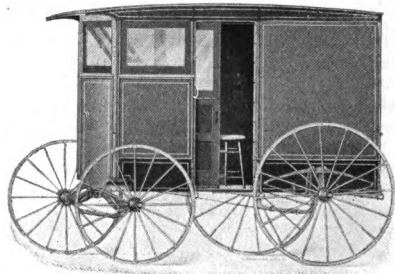
Style 32.

Full platform, panel side. Body 38 inches from ground. Side door, 18 inches wide. Two panel doors 37 inches high in rear, with overhead glass transom. Single box seat, as shown. Full width hinged seat, double box seat or stool, as ordered. Wheels, front 34 inches; rear, 46 inches. Body 7 feet long by 42 inches wide. Longer bodies furnished at extra prices.

No.	Axles	Tire	Weight	Capacity
32-A	1 1/4"	1 1/4x7/16	850 lbs.	1000 lbs.
32-B	1 3/8"	1 3/8x1/2	925 lbs.	1500 lbs.
32-C	1 1/2"	1 1/2x1/2	1050 lbs.	2000 lbs.

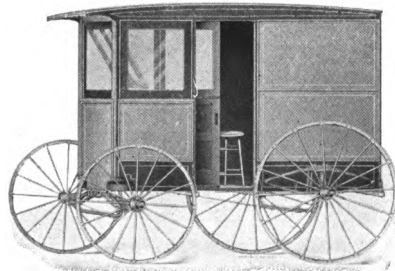
Style 33.

This wagon is identical with Style 30, except size of front and side windows. Especially desirable where parties wish to install an extra large capacity bottled milk system. See description of Style 30 for specifications. This style of body can also be furnished with No. 31 wagon.



Style 34.

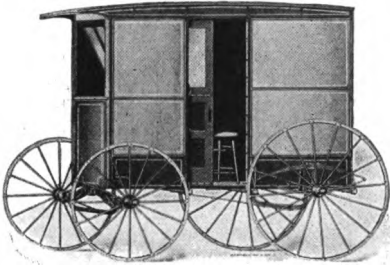
Low-down, short-turn, canvas panel. Body only 23 inches from ground. Side door 18 inches wide. Two panel doors 42 inches high in rear, with glass transom overhead. Can furnish stool, full width hinged or double box seat, as ordered. Wheels, front, 37 inches; rear, 46 inches. Body 7 feet long by 37 inches wide. Can furnish body 42 inches wide on wide track gear; also furnished with longer bodies at an extra charge.



No.	Axles	Tire	Weight	Capacity
34-A	1 1/8"	1 1/8x3/8	725 lbs.	1000 lbs.
34-B	1 1/4"	1 1/4x7/16	775 lbs.	1200 lbs.
34-C	1 3/8"	1 3/8x1/2	875 lbs.	1500 lbs.

Write for Special Milk Wagon Catalog.

# Milk Wagons



## Style 35.

Low-down, short-turn, canvas side. Body only 23 inches from ground. Side door 18 inches wide. Drop end-gate, with roll curtain in rear. Can furnish stool, full width hinged seat, or single or double box seat, as ordered. Body 6 feet 9 inches long, by 34 inches wide. Front wheels 37 inches; rear, 46 inches.

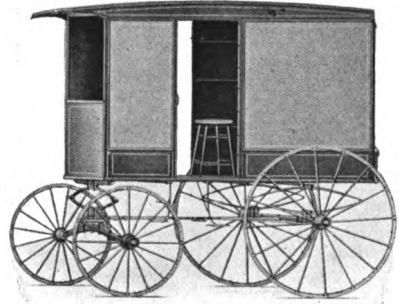
## Style 36.

Same in all respects as Style 35, except being entirely closed in rear, instead of end-gate and curtain.

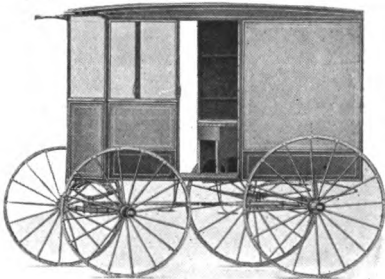
No.	Axles	Tire	Weight	Capacity
35-A	1 1/8"	1 1/8x3/8	650 lbs.	1000 lbs.
35-B	1 1/4"	1 1/4x7/16	750 lbs.	1200 lbs.
36-A	1 1/8"	1 1/8x3/8	650 lbs.	1000 lbs.
36-B	1 1/4"	1 1/4x7/16	750 lbs.	1200 lbs.

## Style 37.

Three-spring, cut under, canvas side. Body 38 inches from ground. Door opening, 18 inches on side. Door furnished extra. Hinged end-gate with roll curtain in rear. Window in front at an extra charge; also panel doors in rear. Full width hinged seat, stool or single or double box seat furnished. Front wheels 34 inches; rear, 44 inches. Body, 6 feet 9 inches long, by 42 inches wide.



No.	Axles	Tire	Weight	Capacity
37-A	1 1/8"	1 1/8x3/8	600 lbs.	900 lbs.
37-B	1 1/4"	1 1/4x7/16	675 lbs.	1200 lbs.



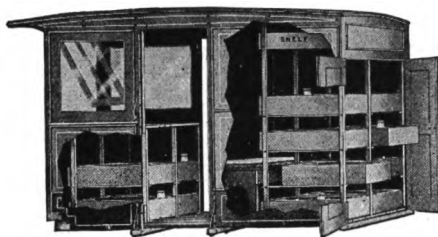
## Style 38.

Three-spring, short-turn, canvas side. Body 30 inches from ground. Door opening, 18 inches, on side. Door furnished extra. Hinged end gate, with roll curtain in rear. Panel doors furnished extra; also front swing window. Full width hinged seat, single or double box seat, or stool furnished, as ordered. Front wheels, 38 inches; rear, 42 inches. Body, 6 feet 9 inches by 42 inches.

No.	Axles	Tire	Weight	Capacity
38-A	1 1/8"	1 1/8x3/8	510 lbs.	900 lbs.
38-B	1 1/4"	1 1/4x7/16	620 lbs.	1200 lbs.

Write for Special Milk Wagon Catalog.

# Bottled Milk System No. 1 (Wooden Cases.)



This system is desirable where dairymen wish to use bottles, but do not want to carry ice around same. Space in front of body can be equipped with crates same as rear, or may be left open for large cans, if desired. This is a light and compact bottled milk system. The bottles are carried in wooden racks with open bottoms, giving free circulation of air. These cases are carried in the wagon on angle iron frame work and can be drawn to the front when desired, giving the driver access to all bottles from his seat. Cases may be filled with bottles.

ties in the dairy and loaded in wagon through rear doors. Over the cases in rear is a shelf full width of body which may be utilized for carrying blankets, halters, jars or small egg cases. Wood partitions for cases for pint bottles are made up so as to serve for either pints or half pints.

Below we list several different arrangements of the No. 1 system, with prices, which include frame work and cases complete, ready to receive bottles. These are net prices of the bottled milk system in addition to regular price of wagon.

## Nos. 35, 36 and 37

I.L.	
Front 4 cases	48 qts.
Rear 4 cases	80 qts.
Rear 5 cases	90 pts.
Total capacity	128 qts. 90 pts.

### PRICE, \$20.00.

N.N.	
Front 1 case	15 pts.
Front 1 case	15 hf. pts.
Rear 2 cases	42 qts.
Total capacity	42 qts. 15 pts. 15 hf. pts.

### PRICE, \$7.00.

M.M.	
Front 2 cases	24 qts.
Front 3 cases	45 hf. pts.
Rear 4 cases	80 qts.
Rear 5 cases	90 pts.
Total capacity	104 qts. 90 pts. 45 hf. pts.

### PRICE, \$21.00.

## Nos. 29, 30, 31, 32, 33 and 34

P.	
Front 4 cases	60 qts.
Rear 4 cases	112 qts.
Rear 5 cases	120 pts.
Total capacity	172 qts. 120 pts.

### PRICE, \$20.00.

R.	
Front 2 cases	30 qts.
Front 3 cases	54 pts.
Rear 4 cases	84 qts.
Rear 4 cases	112 qts.
Total capacity	226 qts. 54 pts.

### PRICE, \$20.00.

S.	
Front 2 cases	30 qts.
Front 3 cases	54 hf. pts.
Rear 4 cases	84 qts.
Rear 5 cases	160 pts.
Total capacity	114 qts. 160 pts. 54 hf. pts.

### PRICE, \$22.00.

T.	
Front 2 cases	30 qts.
Front 3 cases	54 hf. pts.
Rear 4 cases	72 qts.
Rear 5 cases	112 pts.
Total capacity	102 qts. 112 pts. 54 hf. pts.

### PRICE, \$22.00.

P.P.	
Front 2 cases	30 qts.
Front 3 cases	54 pts.
Rear 4 cases	72 qts.
Rear 4 cases	96 qts.
Total capacity	198 qts. 54 pts.

### PRICE, \$20.00.

R.R.	
Front 2 cases	30 qts.
Front 3 cases	54 pts.
Rear 5 cases	90 qts.
Rear 5 cases	120 qts.
Total capacity	240 qts. 54 pts.

### PRICE, \$23.00.

S.S.	
Front 3 cases	72 pts.
Front 3 cases	54 pts.
Rear 5 cases	105 qts.
Rear 5 cases	140 qts.
Total capacity	245 qts. 126 pts.

### PRICE, \$24.00.

In addition to the above we can install the following arrangements in wagon No. 33.

T.T.	
Front 3 cases	45 qts.
Front 4 cases	72 pts.
Rear 4 cases	84 qts.
Rear 4 cases	112 qts.
Total capacity	241 qts. 72 pts.

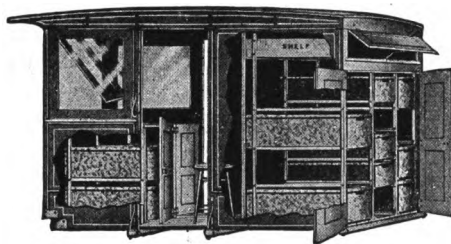
### PRICE, \$23.00.

Q.	
Front 8 cases	144 pts.
Rear 5 cases	105 qts.
Rear 5 cases	140 qts.
Total capacity	245 qts. 144 pts.

### PRICE, \$27.00.

## Bottled Milk System No. 2

### Galvanized Cases.



We illustrate herewith our bottled milk system No. 2 which we recommend where it is desired to keep the milk cool with ice or cold water. Body of wagon is lined with galvanized iron, leaving an air space between the sides of body and the lining. The galvanized iron cases which carry the bottles surrounded with chipped ice or cold water, are fitted inside with racks for holding bottles in place, and are carried in the wagon on angle iron frame work. This frame work is thoroughly bolted and braced and guaranteed to give the required service.

ice. Just back of the seat are three doors (one for each section of cases) through which the cases may be drawn to the front, giving the driver access to all bottles from his seat. The cases may be filled with bottles in a dairy and loaded in the wagon through rear doors. Space in front of body can be equipped with crates, same as rear, or may be left open for large cans, if desired. Shelf over cases in rear full width of body which may be utilized for carrying blankets, halters, jars or small egg cases.

We furnish the best grade galvanized iron cases complete with wooden partitions, ready to receive bottles, or can supply metal partitions at small extra cost. Cases have hand hole in each end and are bound on the bottom with three iron strips as shown. Strip around top of case is double thick, insuring strength and durability. Wood partitions for cases for pint bottles are made up so as to serve for either pints or half pints.

Below we list several different arrangements of the No. 2 system, with prices which include frame work and cases complete, ready to receive bottles. These are net prices of the Bottled Milk System in addition to regular price of wagon.

### Nos. 35, 36 and 37—Regular Size Body

No. A.	
Front 4 cases .....	60 qts.
Rear 12 cases .....	120 qts.
Total capacity .....	180 qts.
PRICE, \$32.00.	

No. B.	
Front 6 cases .....	108 pts.
Rear 12 cases .....	120 qts.
Total capacity .....	120 qts.
	108 pts.
PRICE, \$36.00	

No. C.	
Front 6 cases .....	108 pts.
Rear 5 cases .....	90 pts.
Rear 8 cases .....	80 qts.
Total capacity .....	198 pts.
	80 qts.
PRICE, \$38.00.	

No. AA.	
Front 2 cases .....	30 qts.
Front 3 cases .....	54 hf. pts.
Rear 4 cases .....	72 pts.
Rear 1 case .....	18 hf. pts.
Rear 8 cases .....	80 qts.

Total capacity .....	110 qts.
	72 pts.
	72 hf. pts.

PRICE, \$36.00.

No. BB.	
Front 4 cases .....	60 qts.
Rear 8 cases .....	80 qts.
Rear 3 cases .....	54 pts.
Rear 2 cases .....	36 hf. pts.

Total capacity .....	140 qts.
	54 qts.
	36 hf. pts.

PRICE, \$34.00.

### Nos. 29, 30, 31, 32, 34—Regular Size Body

No. D.	
Front 4 cases .....	60 qts.
Rear 12 cases .....	144 qts.
Total capacity .....	204 qts.
PRICE, \$32.00.	

No. E.	
Front 6 cases .....	108 pts.
Rear 12 cases .....	144 qts.
Total Capacity .....	144 qts.
PRICE, \$36.00. 108 pts.	

## No. 2 System—Cont.

No. F.	
Front 4 cases	60 qts.
Rear 8 cases	96 qts.
Rear 5 cases	105 pts.

Total capacity ..... 156 qts.  
**PRICE, \$34.00.** 105 pts.

No. GG.	
Front 4 cases	60 qts.
Rear 10 cases	120 qts.
Rear 3 cases	63 pts.
Rear 3 cases	63 hf. pts.

Total capacity ..... 180 qts.  
 63 pts.  
**PRICE, \$40.00.** 63 hf. pts.

No. II.	
Front 2 cases	30 qts.
Front 3 cases	54 hf. pts.
Rear 10 cases	140 qts.
Rear 6 cases	144 pts.

Total capacity ..... 170 qts.  
 144 pts.  
**PRICE, \$42.00.** 54 hf. pts.

No. UU.	
Front 4 cases	60 qts.
Rear 10 cases	140 qts.
Rear 3 cases	72 pts.
Rear 3 cases	72 hf. pts.

Total capacity ..... 200 qts.  
 72 pts.  
**PRICE, \$40.00.** 72 hf. pts.

No. EE.	
Front 4 cases	60 qts.
Rear 8 cases	96 qts.
Rear 3 cases	63 pts.
Rear 2 cases	42 hf. pts.

Total capacity ..... 156 qts.  
 63 pts.  
**PRICE, \$34.00.** 42 hf. pts.

Or if it is not desired to equip body to its full capacity, we can easily install our No. 2 System with fewer cases in any of our dairy wagons, for instance:

No. CC.	
Front 1 case	15 qts.
Front 1 case	18 pts.
Rear 3 cases	36 qts.

Total capacity ..... 51 qts.  
**PRICE, \$12.00.** 18 pts.

No. OO.	
Front 1 case	15 qts.
Front 1 case	18 pts.
Rear 4 cases	48 qts.
Rear 2 cases	42 pts.
Rear 1 case	21 hf. pts.

Total capacity ..... 63 qts.  
 60 pts.  
**PRICE, \$20.00.** 21 hf. pts.

No. DD.	
Front 2 cases	30 qts.
Front 3 cases	54 hf. pts.
Rear 4 cases	84 pts.
Rear 1 case	21 hf. pts.
Rear 8 cases	96 qts.

Total capacity ..... 126 qts.  
 84 pts.  
**PRICE, \$36.00.** 75 hf. pts.

No. FF.	
Front 2 cases	30 qts.
Front 3 cases	54 pts.
Rear 10 cases	120 qts.
Rear 6 cases	126 pts.

Total capacity ..... 150 qts.  
**PRICE, \$42.00.** 180 pts.

No. HH.	
Front 2 cases	30 qts.
Front 1 case	18 pts.
Front 2 cases	36 hf. pts.
Rear 10 cases	120 qts.
Rear 4 cases	84 pts.
Rear 2 cases	42 hf. pts.

Total capacity ..... 150 qts.  
 102 pts.  
**PRICE, \$42.00.** 78 hf. pts.

No. JJ.	
Front 2 cases	30 qts.
Front 1 case	18 hf. pts.
Front 2 cases	36 pts.
Rear 10 cases	140 qts.
Rear 3 cases	72 pts.
Rear 3 cases	72 hf. pts.

Total capacity ..... 170 qts.  
 108 pts.  
**PRICE, \$42.00.** 90 hf. pts.

No. YY.	
Front 2 cases	30 qts.
Rear 1 case	21 pts.
Rear 1 case	21 hf. pts.
Rear 1 case	12 qts.

Total capacity ..... 42 qts.  
 21 pts.  
**PRICE, \$12.00.** 21 hf. pts.

No. ZZ.	
Front 2 cases	30 qts.
Rear 4 cases	48 qts.
Rear 3 cases	63 pts.

Total capacity ..... 78 qts.  
**PRICE, \$18.00.** 63 pts.

## Wagon No. 33

This body will accommodate arrangements D, E, F, DD, EE, FF, GG, HH, II, JJ, UU, and in addition, the following:

No. VV.	
Front 6 cases	90 qts.
Rear 10 cases	140 qts.
Rear 6 cases	144 pts.

Total capacity ..... 230 qts.  
**PRICE, \$44.00.** 144 pts.

No. XX.	
Front 3 cases	45 qts.
Front 4 cases	72 pts.
Rear 10 cases	140 qts.
Rear 4 cases	96 pts.
Rear 2 cases	48 hf. pts.

Total capacity ..... 185 qts.  
 168 pts.  
**PRICE, \$46.00.** 48 hf. pts.

No. WW.	
Front 3 cases	45 qts.
Front 1 case	18 hf. pts.
Front 3 cases	54 pts.
Rear 10 cases	140 qts.
Rear 3 cases	72 pts.
Rear 3 cases	72 hf. pts.

Total capacity ..... 185 qts.  
 126 pts.  
**PRICE, \$46.00.** 90 hf. pts.

# Star Whitewashers and Sprayers

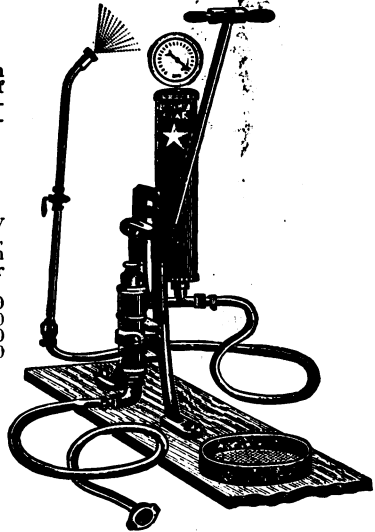
## Style "D"

This style machine is made in four sizes of which style "D" is the smallest. Cylinders are made of heavy seamless brass tubing with heavy cast phosphor-bronze heads. The covering material is contained in a separate vessel.

### Equipment

Spray pipe complete with  $\frac{1}{4}$ -inch cock and spray nozzle, one extra spray tip, 200 pounds pressure gauge, special galvanized sieve, follower wrench, one length of 1-inch suction hose, and 10 feet of  $\frac{1}{2}$ -inch Star special discharge hose.

Style D—Equal to 10 men with brushes. Price..\$25.00  
 Style C—Equal to 16 men with brushes. Price.. 31.00  
 Style B—Equal to 20 men with brushes. Price.. 38.00  
 Style A—Equal to 30 men with brushes. Price.. 44.00



## Style "H"

Consists of a 4-gal. heavy galvanized iron tank equipped with a powerful self-contained all-brass air pump. It is provided with a bail handle and is portable.

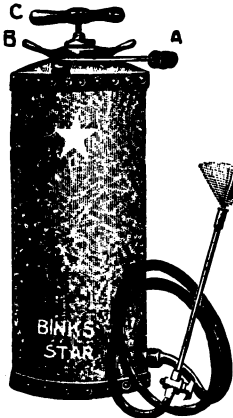
Unscrew top lid and remove the pump. Strain covering material into the tank until within two or three inches from top, place the pump in tank and screw the lid down tight. Pump 25 or 30 long strong strokes with pump which will charge tank with about 35 pounds pressure. Open spray cock and you are ready for work.

Capacity, equal to work of 5 men with brushes.

### Equipment

Spray pipe complete with  $\frac{1}{4}$ -inch cock and spray nozzle and 10 feet of  $\frac{3}{8}$ -inch discharge hose.

List Price .....\$9.60



## Style "I"

This style consists of a pump mounted in a 12-gallon galvanized iron tank. An improved agitator keeps the liquid in perfect solution while the pump is being operated. This equipment is furnished with handles, on a strong two-wheel truck with small wheels, and as shown in cut on a wheelbarrow frame.

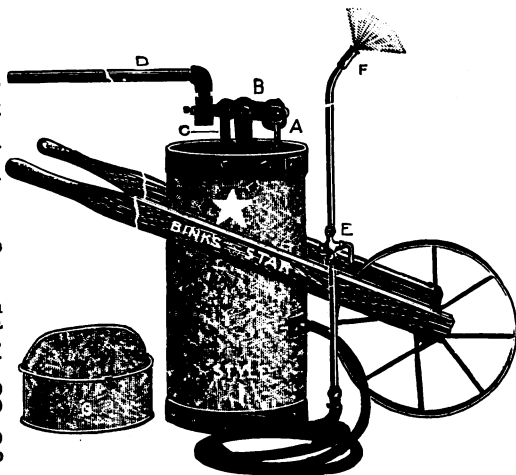
Capacity is equal to work of 10 men with brushes.

### Equipment

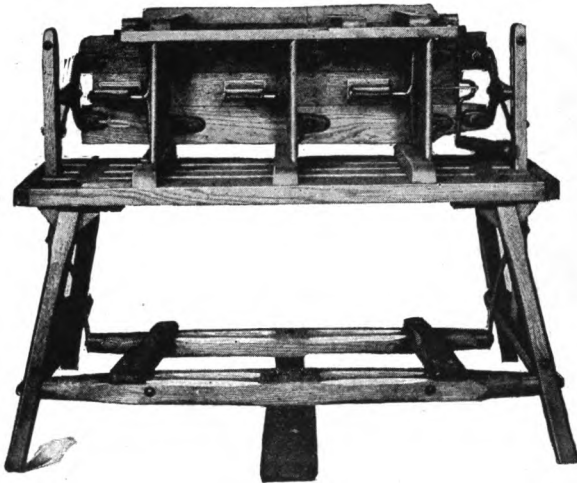
Spray pipe complete with  $\frac{1}{4}$ -inch cock and spray nozzle, one extra spray tip, special galvanized sieve, follower wrench, and 10 feet of  $\frac{1}{2}$ -inch Star special discharge hose.

Style G, unmounted. Price..\$25.00  
 Style G, mounted. Price.... 27.00  
 Style I, wheelbarrow mounting ..... 28.00

Prices on this page are subject to discount.



## Champion Egg Case Machine



We are general agents for this tried and proven device. You can save one-half your time and make better cases.

With it you won't have any cases that the fillers won't fit. Both sections are square and true.

It is made of solid oak and malleable iron. Ordinary use will never wear it out.

With each machine is furnished a cleating attachment for standard No. 2 Drop Cleat cases. Easily attached and detached.

Prices on application.

These Cuts Show the Operation



No. 1. Ends and centers are placed in position. A single movement of the lever at the right clamps all three securely.



No. 2. One side is nailed on. Note that both ends and center piece rest upon solid supports for nailing. As they are held firmly and square the operator can nail twice as fast.



No. 3. The operator steps on the treadle, square the operator can raising the frame so that it clears the bench. He turns the case over and nails the other side, after which he swings the case back one-fourth turn to position in No. 1 and nails on bottom.



No. 4. The case is finished. A single movement of the lever releases the case and he lifts it off.



# Egg Cases and Fillers



**FILLERS**—Our stock of Fillers is always complete. We are prepared to make prompt shipment of small or full car lots from the factory. Our fillers in the various weights are the best on the market as regards quality of board and finish.

**CASES**—On account of our facilities for furnishing these goods, we are able to give our customers the benefit of very favorable prices. Delivered prices on car lots of best quality cases quoted promptly.

## Fillers in Less Than Car Loads

Per Set.

No. 2 machine made.....	.....
Medium machine made.....	.....
No. 1 machine made.....	.....

## Egg Cases, Knocked Down Without Fillers

Small lot 100 lot 500 lot

No. 1, 30 doz. sawed and planed Pine.....	.....	.....
No. 2, 30 doz. veneer (sawed ends and centers) whitewood.....	.....	.....
No. 2, 36 doz. veneer (sawed ends and centers) whitewood.....	.....	.....
No. 2, 30 doz. veneer whitewood cases furnished on orders when not otherwise specified.		

## Filler Cases

No. 2, 30 dozen, whitewood. Each,...	
A 30 dozen filler case holds 10 sets No. 1 fillers.	
A 30 dozen filler case holds 12 sets medium fillers.	

A 30 dozen filler case holds 15 sets No. 2 fillers.

We do not fill orders for fraction of filler case capacities as above.

## Division Boards or Flats

Per 100 Per 1000

No. 1 Strawboard.....	.....	.....
Medium Strawboard.....	.....	.....
No. 2 Strawboard.....	.....	.....

## Wire Nails

Plain, full count, per keg.....	.....
Cement-coated, full count, pr.keg.....	.....
Special, large head, cement-coated egg case nails, per keg.....	.....

## Excelsior

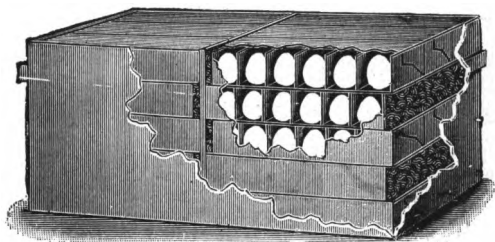
Fine, 100 lbs., ....	Per ton, ....
A bale averages 85 lbs.	

## Cork Shavings

1-sack lot (about 40 lbs.), per lb.....	.....
5-sack lots, per lb.....	.....
Sacks (not returnable), each.....	.....

*See Price Current for Prices.*

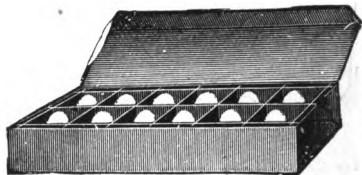
## The Ideal Egg Carton



Eggs shipped packed in carton filler in cold weather clearly demonstrate the superiority of this new filler over the old. Under the same conditions, eggs in the old filler arrived frozen, while in the carton filler they were intact. If they will retain the heat, they will retain the cold.

The Ideal is more convenient, better board and better lock than any other carton ever offered.

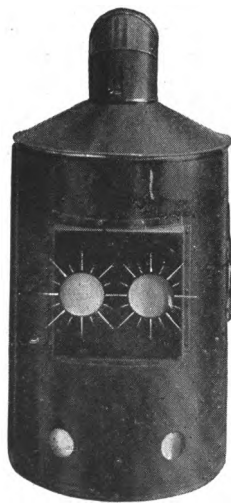
Shippers of selected eggs should put them up in such shape as to insure their delivery without injury. The Carton Egg Case Filler is now recognized as a distinctive mark of high grade goods. The old style filler is entirely eliminated and is replaced by thirty small strawboard cartons, each holding one dozen eggs, and locked into a complete box ready to hand from the case to the consumer.



	Prices	Plain	Printed
1-M lots, per M.....	.....	.....	.....
5-M lots, per M.....	.....	.....	.....
10-M lots, per M.....	.....	.....	.....
25-M lots, per M.....	.....	.....	.....
50-M lots, per M.....	.....	.....	.....
100-M lots, per M.....	.....	.....	.....

See Price Current for Prices.

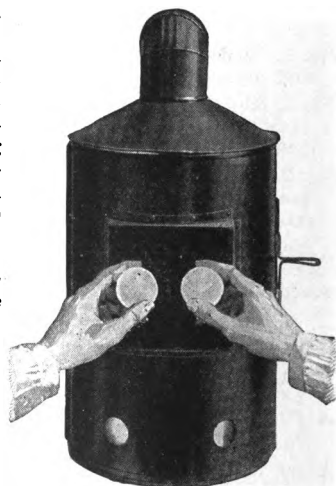
## Victor Egg Tester



Ready for Use.

By using this device anyone can, with a little practice, candle eggs as closely as a professional. It is an invaluable aid to the egg buyer, groceryman or produce merchant, enabling him to discriminate between fresh laid and stale or aged eggs. No eggs should be put in storage without candling. The cost of the apparatus is but a trifle as compared to the advantages derived from its use.

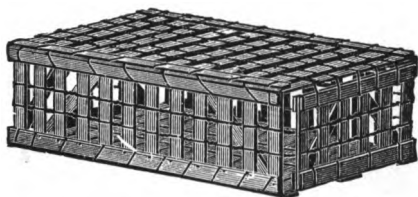
The tester is substantially made of heavy tin enameled in black. It is 7½ inches in diameter and 16 inches high over all. The price includes a good lamp.



In Use.

Price..... \$150

## Sites' Ventilated Poultry Coops



A light weight, substantial coop for shipping live poultry. Has strong frame ends and is thoroughly braced to prevent sagging. Door on top is securely held in place by a steel spring, which also forms a hinge. Door can not become detached from coop, and is always in place. Owing to thorough

ventilation, poultry is prevented from smothering. The light weight of this coop saves shippers using it from 50 to 75 per cent in express charges. Always shipped knocked down unless otherwise specified. Can be set up in a few minutes by any one, and requires no tools except a hammer.

Standard size Chicken Coops.....	24x36x12 inches.	Each, \$......
Special size Chicken Coops.....	27x44x12 inches.	Each, .....
Standard size Turkey Coops.....	24x36x16 inches.	Each, .....
Special size Turkey Coops.....	27x44x16 inches.	Each, .....

See Price Current for Prices.

### Plain Slat Chicken Coops

We are in position to furnish Whitewood Slat Chicken Coops, and can make prompt shipment of the following standard sizes:

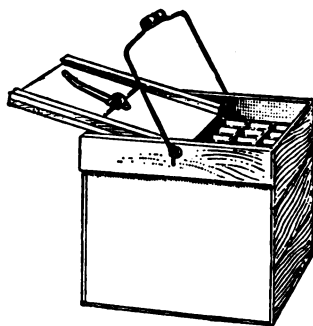
Standard size, 48 in. x 30 in. x 14 in.      Star size, 48 in. x 30 in. x 14 in.

Shipped K. D. unless otherwise ordered. We make an extra charge of 5 cents each for nailing coops. See Price Current for prices.

### Farmer's Friend Egg Carrier

Made of wood, nicely painted and finished, very strong and durable, and will last for years. Has an adjustable lid, which fits inside the case, and an automatic lock which can be locked at any point so the lid may be adjusted up or down, according to the quantity of eggs in the carrier. Eggs are firmly held so they will not jostle and break. When the lid is adjusted and locked, all the eggs can be turned at the same time without injury to any of them.

Eggs should be kept as uniform in temperature as possible, especially if they are for hatching. The solid sides protect the eggs from all weather. It is a time saver—ten carriers can be filled, or emptied, in less time than the number of eggs for one could be packed in a basket, and there would be no breakage.



Farmers and poultry keepers use the "Farmers' Friend" Egg Carriers for delivering eggs to market, and for shipping incubator eggs. It makes no difference how far you have to carry them, or how many bumps or jolts they receive, the eggs will be delivered in the same condition as when put into the carrier, and there will be no dispute in the count. When the eggs are delivered the fillers can be folded, placed in the bottom of the carrier, and it can then be used to take home groceries or other purchases.

Carriers hold 12 dozen eggs when full. Prices F. O. B. Illinois factory.

Price, Single Carrier.....	\$0.50
Three Carriers for.....	1.25
One dozen Carriers.....	4.00

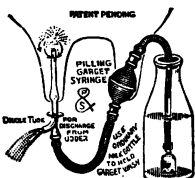
# Easy-to-Use Cattle Instruments



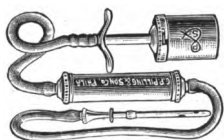
**Cattle Case No. 3.**  
Containing  
\$4.00 Garget  
Outfit, \$3.00  
Milk Fever  
Outfit and 12  
other Cattle  
Instruments  
needed by every  
dairyman,  
complete in  
case, \$15.00;  
regular value,  
\$21.00. Sent  
prepaid with  
full "Easy to  
Use" directions  
on receipt of  
\$15.00.

## Garget Outfit.

The only proper and successful treatment of garget. Complete outfit including garget remedy. Full directions. Sent prepaid on receipt of \$4.00.



## Milk Fever Outfit. For Air Treatment.



Air treatment has cured 97 per cent. of cases treated.

This treatment, recommended by the Bureau of Animal Industry, United States Government, Department of Agriculture.

Sent prepaid, with full instructions, on receipt of \$3.00.

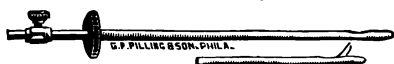
## Special Horse and Cattle Syringe.

Used with any ordinary stable bucket.

Price with full directions, prepaid at our expense..\$6.00



## Teat Blistoury



For Cutting Obstructed Teats  
Price, with full directions.....\$1.50



## Cattle Case No. 2.

Contains \$15.00 worth of "Easy to Use" Cattle instruments every cattle owner should have; sent prepaid at our expense, with full "Easy to Use" directions, on receipt of \$10.00.

## Hard Milker Outfit.

The Pilling Hard Milker Outfit is designed to remedy all those obstructions to free milking that annoy the dairyman.

Sent prepaid with full directions, \$3.00.



## SYRINGE.

Heavy Brass Polished and Nickeled.



For giving medicine to horses, cows and other animals.

1 oz. with 2 pipes.....	\$1.75
2 oz. with 2 pipes.....	2.00
4 oz. with 2 pipes.....	2.50
6 oz. with 2 pipes.....	3.00
8 oz. with 2 pipes.....	3.50

## Cattle Trocars for Bloat.



Postpaid, with full directions....\$1.50

## Milking Tube.

For Sore and Obstructed Teats and Hard Milking Cows.



Can be made any length by moving the adjustable slide. Made only in coin silver.

## PRICES.

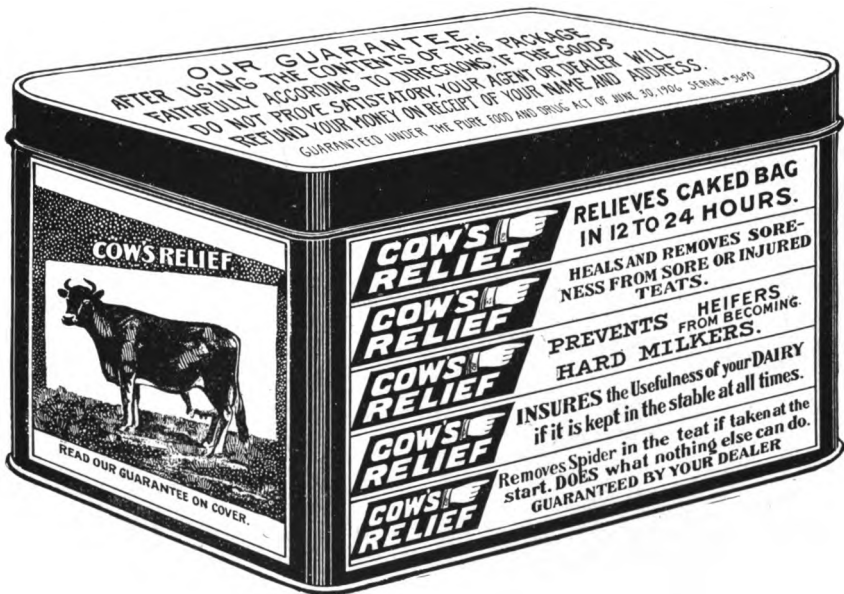
Set of four tubes, 1 3/4 inches.....	\$2.00
Each .....	.50

## Special Lengths.

2 3/4 inches .....	\$0.80
3 3/4 inches .....	1.10

Sent postpaid.

# Cows' Relief



**COWS' RELIEF** relieves caked bag in from 12 to 24 hours if taken at the start.

**COWS' RELIEF** prevents heifers from becoming hard milkers.

**COWS' RELIEF** heals and removes soreness from sore and injured teats.

**COWS' RELIEF** removes spider in the teat if taken at the start.

**COWS' RELIEF** increases the milk flow by keeping the udder in perfect condition.

**COWS' RELIEF** cures warts on bag or teats.

**COWS' RELIEF** cures cow pox.

**COWS' RELIEF** insures the usefulness of your dairy if kept in the stable at all times.

**COWS' RELIEF** is guaranteed both by us and your dealer.

**COWS' RELIEF** is made in the largest, cleanest and best equipped laboratory for this purpose in the world.

**COWS' RELIEF** is a penetrating compound for external use that has satisfied over 99 per cent of its users since 1890.

**COWS' RELIEF** is the standard by which all other remedies of this kind are measured.

**COWS' RELIEF** heals barbed wire cuts, scratches and all open lesions.

**COWS' RELIEF** promptly relieves croup in children.

**COWS' RELIEF** promptly relieves pneumonia in mankind.

**COWS' RELIEF** relieves cold on the chest in one night.

**COWS' RELIEF** relieves chilblains in one night.

**AVOID SUBSTITUTES.** The **GENUINE COWS' RELIEF** is guaranteed to do what the makers claim for it, or we will cheerfully refund your money.

Price, large box .....\$1.00  
Small size ..... .50

## C. P. Cow Stalls and Stanchions

With  
Adjustable  
Stanchions.

### C. P. No. 224 Cow Stall

C. P. Cow Stalls make the ideal cow fastening equipment.

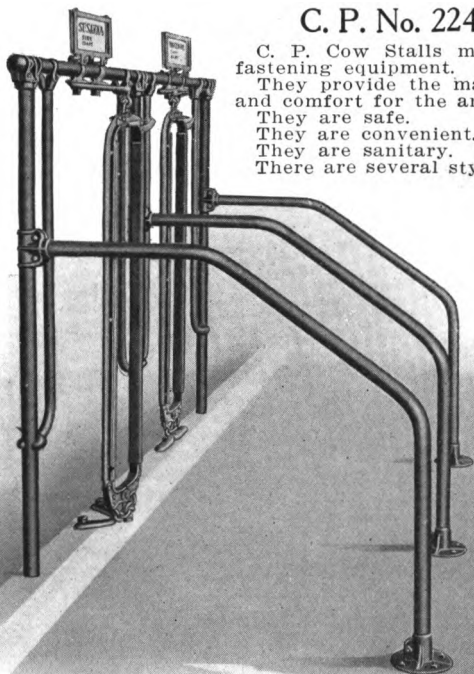
They provide the maximum of freedom and comfort for the animal.

They are safe.

They are convenient.

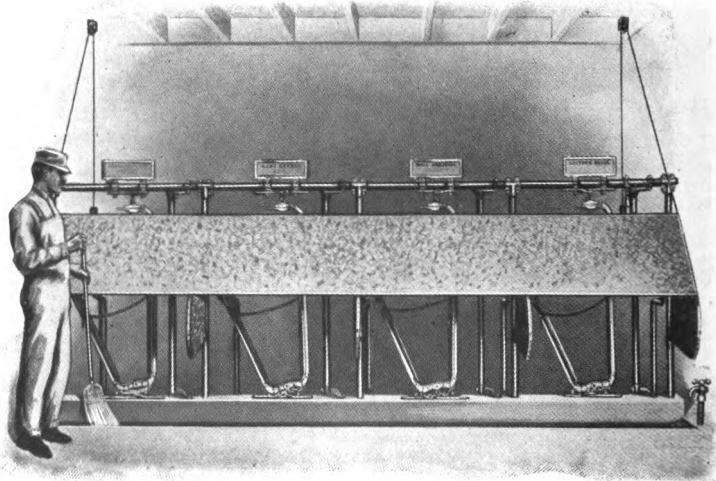
They are sanitary.

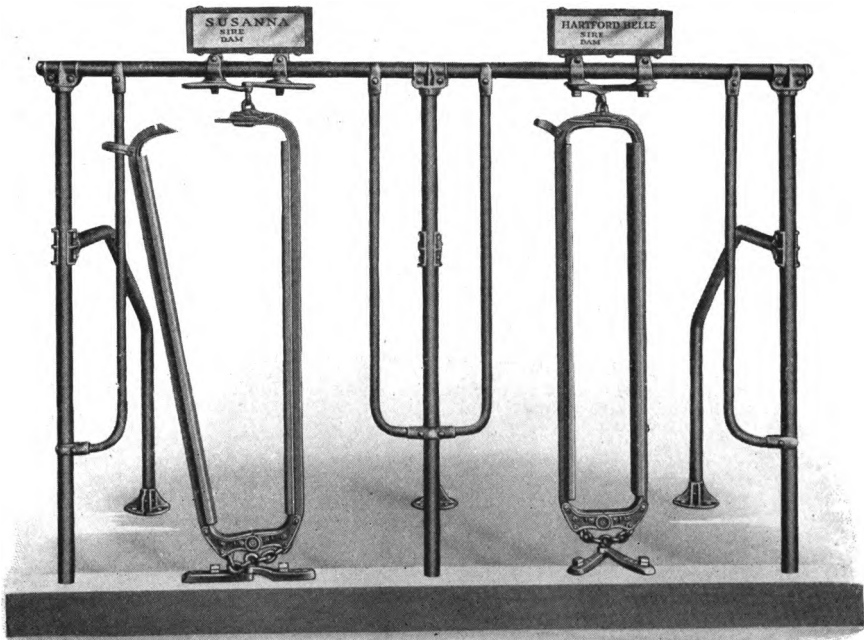
There are several styles to choose from.



The above is a side view of two complete stalls with adjustable stanchions, just as they appear installed, except that the flanges at lower end of stall partitions are buried in the cement when cement floor is used. For wood floors the flanges are secured to floor with wood screws. See next page for complete description.

Steel Stalls complete with Manger. Shows Manger raised for cleaning or watering. Stalls with Mangers are special. Write for quotations.





## No. 224 Stalls, View From Manger Side

### Description of C. P. Stalls

C. P. Stalls are designed to provide the maximum degree of comfort for the animal, combined with safety, convenience, cleanliness, economy of space, time and labor. The stalls are in themselves sanitary, being made of metal with rounded surfaces that do not catch and hold dust. There are no overhead beams or posts to collect dust and shut off the light. The stall partitions act as a supporting brace for the stanchions and at the same time protect the animals from injury. A standing cow cannot step on and injure the udder of her neighbor lying down. This in itself is an important feature, as doubtless every dairymen has had valuable cows injured in this manner. The comfort of the animal is secured by making the stanchions on the rotating principle so the cow can turn her head freely in either direction and permitting her to assume a natural and easy position at all times.

### Sure Stop Device

In the illustration above, of stanchions opened and closed, it will be observed that the stalls have a single post division, or upright, extending from curb to top rail. Experience has shown that this is amply strong. The "Sure Stop" answers every purpose of the double and triple post divisions sometimes used. The purpose of the "Sure Stop" is to make it impossible for the animal when coming into the stall to rush through or past the stanchion. The "Sure Stop" stands about 6 inches from the post, and when the stanchion is opened the only place the cow can put her head is in the stanchion. When the cow is lying down her head comes below the device so that she is perfectly free to turn her head into the most restful position.

### Adjustable to Length

Our No. 224 Stall provides for adjusting of the stanchion backward or forward to align the cow up even with the gutter in the rear. This is an important advantage when cows of different size are stabled together. The alignment device is not furnished separate from the No. 224 stall or the No. 222 stanchion.

### Materials Used

All tubing is high-grade carbon steel and far superior to wrought iron pipe. All tubing except the Sure Stop is 1½-inch outside diameter and amply strong for any strain to which it may be subjected. Parts are held together with specially designed malleable clamps, which grip the tubing like a vise. No threads are cut in the tubing, and it is therefore full section and full strength. As the clamps need not be located in any certain spot, erection of the stalls is very easy and no special tools or skilled labor is required.

Stanchion bars are made of carbon steel tees 1½x1½x3-16 inches, shaped by bending, while hot, over a standard form, insuring accuracy. Steel stanchions are lined with strips of wood for the comfort of the animal.

## No. 224 Stalls—Cont.

### Finish

Stalls and steel stanchions are finished with a coat of japan, which protects the material from rust and forms an excellent base for painting. We recommend that, after erection, the stalls be painted with aluminum paint, an inexpensive paint that can be obtained anywhere.

### Dimensions and Measurements

Purchasers are furnished full and complete instructions for erecting. The following, however, will assist in ordering so as to be sure of getting equipment to fit the space.

The **Standard Height** is 4 feet 5½ inches in the clear. The measurement from top of curb to top of rail is 4 feet 6 inches, but clips for attaching stanchion to rail extend down about ¾ inch. When stanchions are to be put into wood frames the measurement should be 4 feet 5 inches.

### Height of Curb

Where a cement floor and curb are laid, the curb should be 6 inches above floor level. Total height from floor to top of top rail is 5 feet.

### Stall Partitions

Height from floor to center of partition at highest point is 3 feet 6 inches. Distance from stanchion post to upright part of partition is 3 feet 6 inches. End of partition is buried in cement floor and anchored. For wood floor we furnish flanges to be bolted to floor.

### Standing Platform

For cows of average size allow 4 feet 6 inches to 4 feet 8 inches from curb to edge of gutter. Large cows should have up to 5 feet platform. Where cows vary, use aligning stanchions, which allow a range of 5 inches either way from center line.

### Width of Stall

Furnished as ordered. An average width is 3 feet 4 inches. For large breeds allow a little more. Width also depends on location of posts. If 8 feet apart and in standing platform, stalls must be 4 feet wide; if 10, put in 3 stalls, 3 feet 4 inches wide.

### How to Order Stalls and Stanchions

Having decided which style of stall or stanchion you wish, read carefully the foregoing in regard to measurements. There is but one dimension subject to change, viz., the width of the stall. Make a plan of your barn floor, show the location and dimension of all posts, passage ways and obstructions. Then decide how much space to allow per cow and how many cows you wish to place in a row. In ordering complete stalls, order a stall for each cow and one extra stall partition for the end of each row. We suggest that when ordering complete stalls you send in the sketch with dimensions, which will enable us to check your figures and assure your getting equipment that will fit the space.

### List Prices of Stalls

Note: For prices of stanchions separate see under illustrations of the several styles.

C. P. 224. Sanitary steel stalls, including stall partition with flange for cement floor, upright post division, top rail as ordered, "Sure-Stop", name plate holder without card, and double chain hung, wood lined, steel alignment stanchion. Each.....	\$9.75
C. P. 225. Sanitary steel stalls, including stall partition for cement floor, upright post division, top rail as ordered, "Sure-Stop", name plate holder without card or glass, and single chain hung wood lined steel stanchions. Each .....	8.75

### Extra Divisions in Row

The above prices for stalls are for six or more stalls in a row. Where six or more stalls are ordered we make no extra charge for the extra stanchion post and stall partition required to finish the row. Where less than six are ordered we make an extra charge (subject to regular discount) of \$2.25.

### Extras and Deductions

If stalls are wanted without name plate holder, or "Sure-Stop," or both, we make the following deductions from the list prices.

Name plate holder.....	\$0.75
"Sure-Stop" .....	1.50

### Steel Stall Partitions for Wood Stalls

We do not furnish complete wood stalls as, outside of the stanchion itself, there is no special work to be done except to saw and fit the frame. We do, however, furnish stall partitions for wood stalls. These partitions are identical with those furnished with steel stalls; we furnish a hook bolt for attaching the partition to the division post.

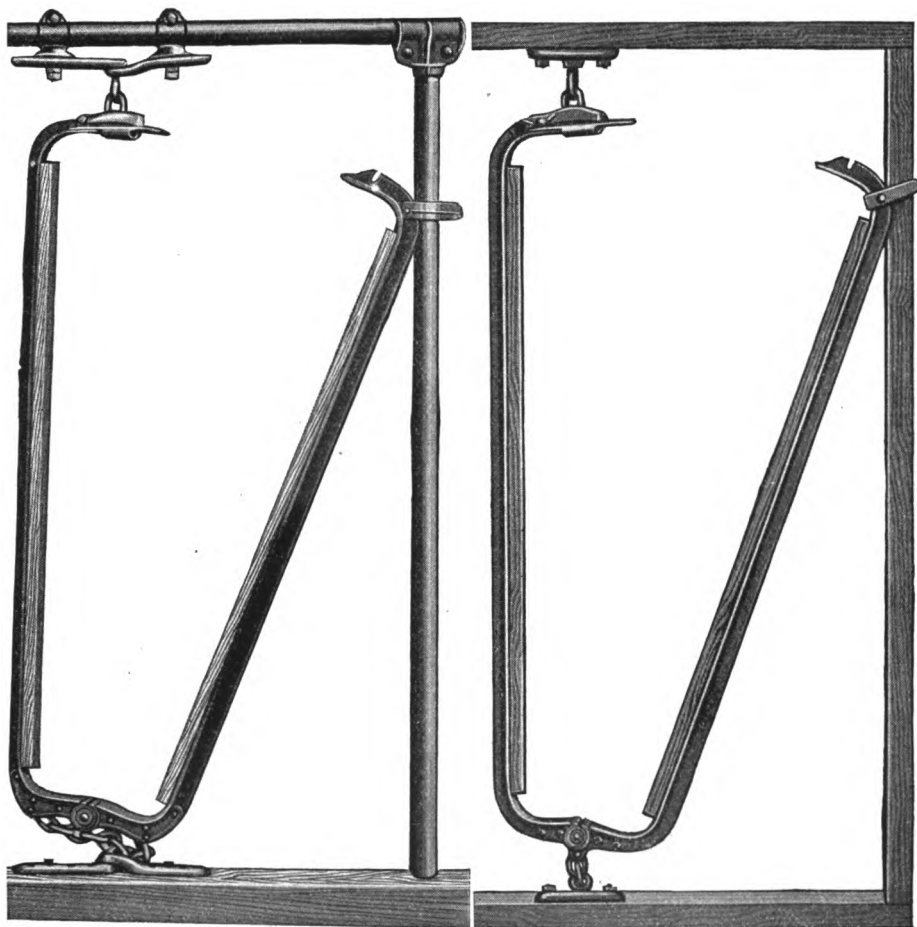
Order either the C. P. 205 Swing Stanchion or the C. P. 204 Chain Hung Stanchion, and the C. P. 206 Stall Partition for wood frame and then build the stanchion frame and you will have a thoroughly modern stall at cost, but little, if any, greater than for old style rigid stanchion.

C. P. 206. Stall partitions for wood stalls. List, each.....	\$1.80
C. P. 22. Flange for wood floor. List, each.....	.45
C. P. 6. Flange for cement floor.....	.20

The above prices are subject to discount.



## C. P. Steel Stanchions



Alignment Stanchion

**C. P. 222**

The Steel Alignment Stanchion, wood lined, with double chain hanger and lock-open clip, as furnished for steel or wood frames, is shown in above cut. This is the same stanchion as furnished with the C. P. 224 steel stall, and we refer you to the description of that stall for particulars.

List price F. O. B. factory, each...\$2.85

Single Chain Hung Steel Stanchion

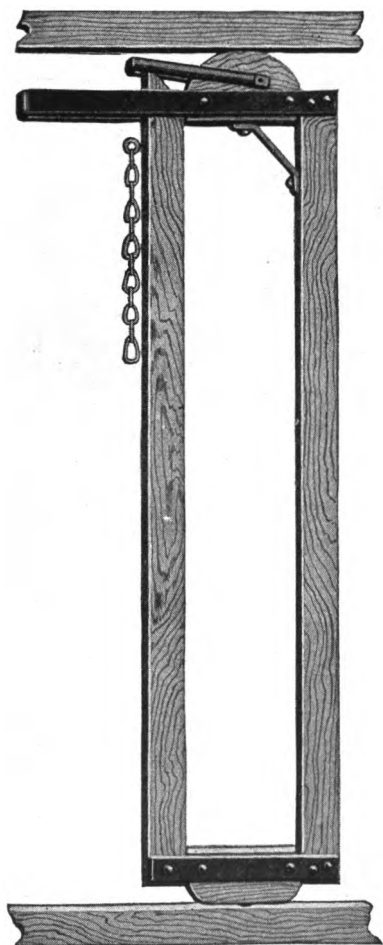
**C. P. 223**

Wood Lined Steel Single Chain Hung Stanchion, without aligning device, for those who do not care for stanchions to line up cows on the gutter. Furnished with chains and swivel for attaching to frame, unless ordered for steel frame.

List price F. O. B. factory, each...\$2.40

Write for Discounts.

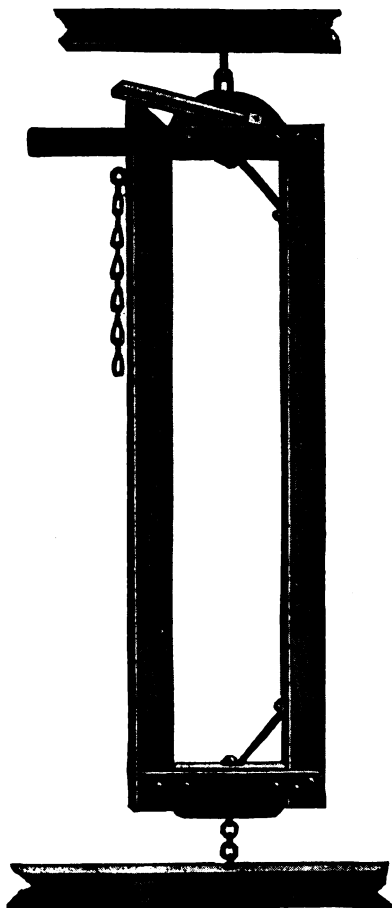
## C. P. Wood Stanchions



**C. P. 204. Chain Hanging Swing Stanchion.**

Furnished as shown above, with bolts and full directions for setting up.

List price, F. O. B. factory, each...\$1.80



**C. P. 205. Swing Stanchion.**

This stanchion rotates freely, being pivoted on bolts at top and bottom. It is furnished complete with bolts and chain and full directions for setting up. Height of stanchion is 4 feet 5 inches in the clear.

List price F. O. B. factory, each...\$1.65

### C. P. Wood Stanchions

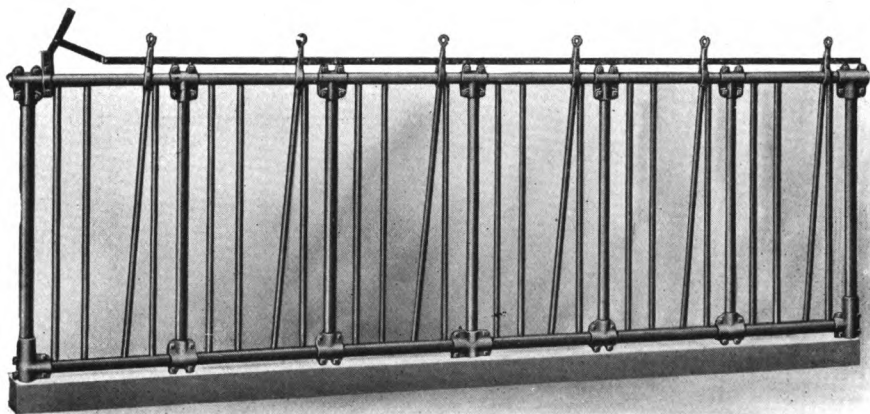
Made of selected hard maple lumber, put together at the ends with  $\frac{1}{4}$ -inch rivets, reinforced with  $1\frac{1}{4}$ -inch No. 10 band steel and corner braces, as shown in cuts. The uprights are  $1\frac{1}{2}$  inches thick by  $2\frac{1}{2}$  inches wide, properly shaped by special machinery, and are always uniform as to shape and size.

These stanchions are finished with one coat of filler and varnished, adding greatly to the appearance. Each stanchion is furnished with lock-open chain and clip.

Write for Discounts.

## Calf Stanchions

(C. P. 226)



Give your young stock the right start in life and you have gone a long way toward insuring a strong, healthy and profitable dairy herd for the future. The dairy barn is not fully equipped without a calf pen and calf stanchions. The C. P. Calf Stanchions are neat, sanitary, convenient and cost so little that we strongly recommend including a sufficient number of them with every order for barn equipment.

Owing to the fact that the size of the calf pen is usually determined by the amount of floor space remaining after the cow stalls have been located, practically every customer requires a different size pen, and we therefore furnish the stanchions and stanchion frames only as ordered for size and number in a row and do not list fences and gates. Oftentimes the calf pen is located in a corner or along one side of the barn, the walls of which answer for one or two walls of the pen, as the case may be. *Where complete pen is wanted, we will be pleased to make special quotations upon receipt of sketch showing dimensions of pen, location of gates, posts, etc.*

### Details and Specifications

The stanchions with frame, as shown, are made up in sections with special fittings. The top and bottom rails and large uprights are of the same material as our C. P. Cow Stalls; i. e.,  $1\frac{1}{2}$  inch O. D. carbon steel piping. The intermediate dividing posts and stanchion arms are  $1\frac{1}{8}$  inch carbon steel piping.

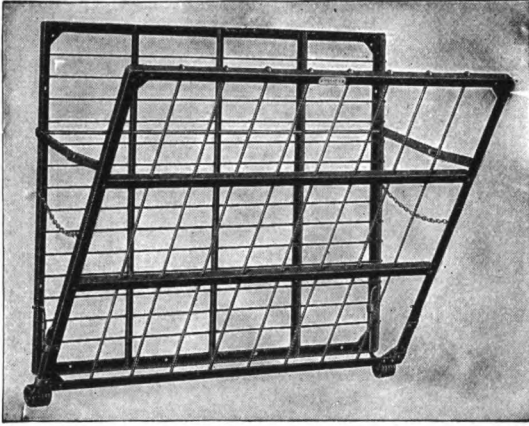
Stanchions may be from 18 to 24 inches center to center, and each stanchion is adjustable in width of neck space, according to size and age of calves.

Please note the locking bar at the top of the stanchions, by means of which all stanchions in a row can be closed or opened at a single operation. Simply throw the locking bar lever to or fro, as the case may be. Stanchions can also be opened or closed separately, if desired.

Stanchions are furnished in rows of six or more, complete with locking bar and lever, at prices quoted, no extra charge being made for the end post. Where less than six stanchions are ordered, an additional charge is made as per the price list.

**Finish.** Calf stanchions are finished the same as cow stalls; i. e., with a coat of japan ready for painting. Prices quoted on application.

## Warren Automatic Hay Rack



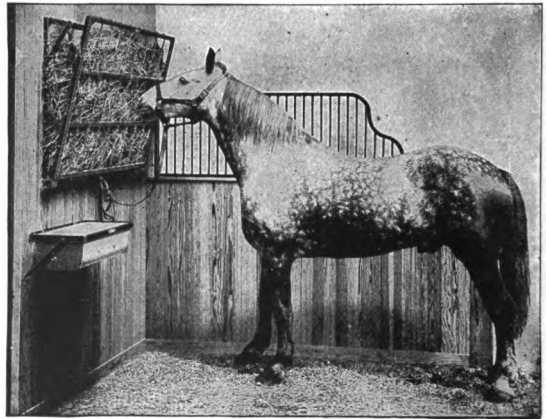
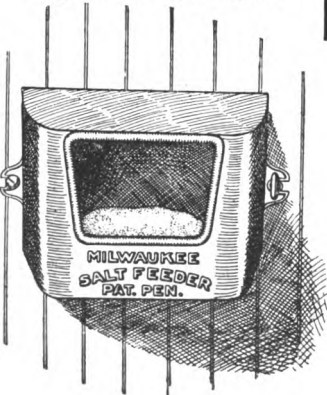
Saves feed and thereby saves money. Made with a spring on the side arm and hinged at the bottom, so that as the animal eats the hay the constant pressure holds it so that it cannot be pulled out in bunches and thrown under foot. As the rack is emptied, it closes. Every bit of the hay is easily reached by the animal. A valuable device for the horse stable, box and hospital stalls and bull pen.

It is not an overhead rack, but is attached to the wall, about 4 feet 6 inches from the floor for horses, and lower down for cattle.

It may be arranged to fill from outside the stall if desired. To fill with hay, the rack is pulled out as far as it will go, the side-arm attachment then falls past the center, automatically locking and holding the rack open against the spring. After filling the rack, the side-arm is raised, allowing spring to close rack against the hay.

Regular size rack is 3 feet high by 3 feet 6 inches long. Frame work is angle iron, well braced at the corners with steel plates. No. 6 galvanized rods are used for the front and No. 9 for the back. Tension springs are  $\frac{3}{8}$  inch coiled steel and every pair warranted. This device will pay for itself in a short time in the saving of feed alone.

Warren Hay Rack,  
complete .....\$6.00



## Loose Salt Feeder

This device consists of one casting and is attached to the wall with screws. It is indestructible. Loose salt can be used at a great saving. No sharp edges to injure the animal. Its low cost, durability and economy recommend it.

Single loose salt feeder.....\$1.00  
One dozen feeders..... 8.00

## Warren Sanitary Grain Box



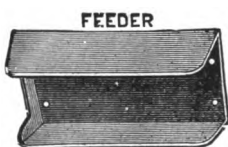
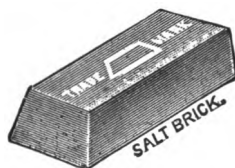
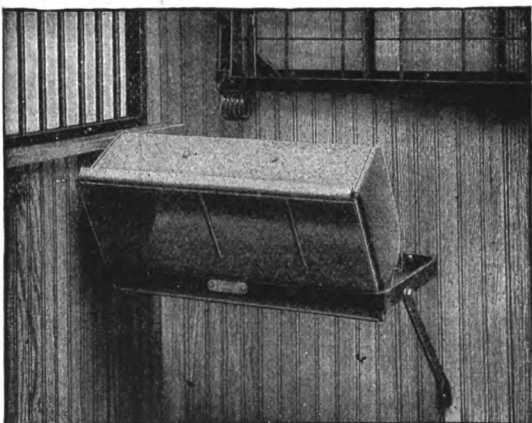
Unequaled for feeding grain in stalls. Has the important advantages of preventing waste of grain and being easily kept clean. Made of heavy galvanized iron, has strong steel frame, fastens to corner of stall with heavy screws, and once put up is there to stay. Bottom and corners are rounded so animal can eat grain up clean. The two rods across near top of box prevent animal nosing out the grain. Any dirt or chaff can be quickly dumped, as shown in cut. Size, 22

inches long; 12 inches wide and 8 inches deep. Every box warranted perfect.

Sanitary Grain Box,  
complete .....\$3.00

## Compressed Salt Bricks

Do your horses and cattle get salt when they want it? Milch cows will give more and better milk, and the animals are healthier when given free access to pure salt. The animals have an instinct which



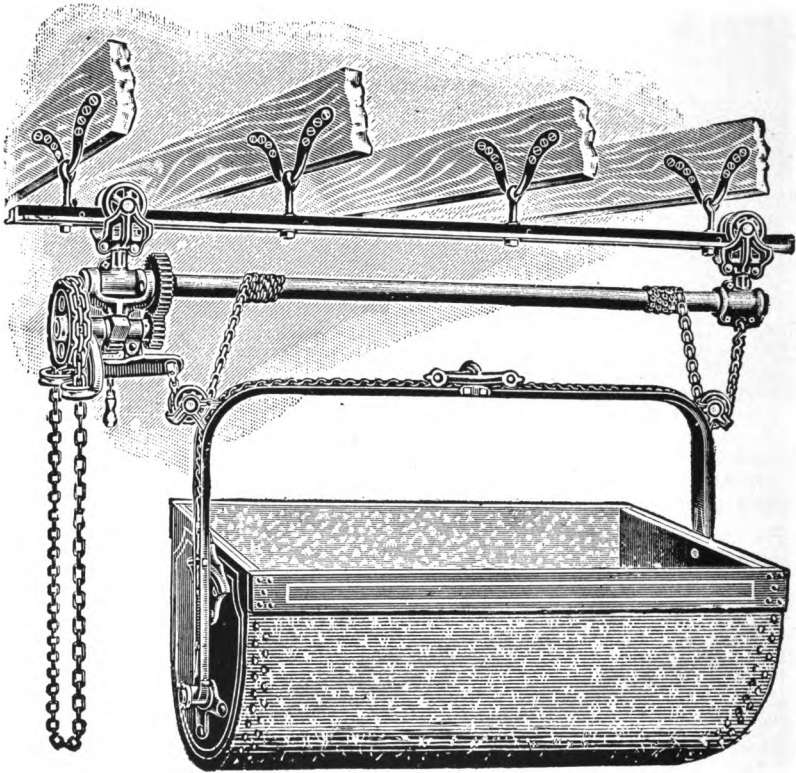
causes them to crave for salt. By the use of compressed salt bricks in connection with our special feeders, pure salt is always before them, and they are not compelled to eat it, as is the case when the salt is mixed with their feed.

Compressed Salt Bricks consist of pure salt compressed into bricks weighing about five pounds each. Special feeders of galvanized iron are furnished just the right size to hold one salt brick each. The feeders are put up in convenient places where the stock can help themselves to the salt. When a brick is used up, slip a new one into the feeder. There is no waste.

Salt bricks are put up in cases of 12 bricks, each case weighing 58 to 61 lbs.

Single bricks, without feeder, each.....	\$0.35
Per case of 12 bricks.....	2.65
Five cases, per case.....	2.05
Ten cases, per case.....	1.85
Feeders, each.....	.35

## Litter Carrier for Angle Track



All Steel Tub

The above shows our All-Steel Tub Litter Carrier for Angle Track. The tub is raised by means of an endless chain and is lowered by pulling a chain trip, allowing it to freely descend to any point. The tub will drop of its own weight, the chains at both ends of the shaft unwinding simultaneously. The trip chain when pulled clear down acts as a brake. Double purchase effect makes it possible to raise a heavy load easily.

The Litter Carrier Tub is held rigidly in the bail by latches which lock both ends of the tub. Tub is dumped by tripping arrangement operated by a rope attached to the double eye lever shown at top of bail in above cut.

The tub is constructed of steel throughout. Ends made of one piece with flanges formed on their edges, to which the side sheet is riveted. Ends are reinforced with heavy galvanized plates. Top edges of tub reinforced with galvanized angle iron, also top edges of the sides. Corners and every joint in the tub are securely riveted. The shape of the tub makes it possible to carry a larger load than with a square box, and is self-cleaning when dumped.

Litter carriers are furnished in four sizes, as follows, outside dimensions:

- No. 2—26 in. wide, 41 in. long, 14 in. deep, weight 45 lbs.
- No. 4—26 in. wide, 41 in. long, 17 in. deep, weight 53 lbs.
- No. 6—26 in. wide, 41 in. long, 19 in. deep, weight 61 lbs.
- No. 8—34 in. wide, 41 in. long, 24 in. deep, weight 85 lbs.

Especial attention is called to Tub No. 8, built for use in horse barns. The tub is constructed of heavy galvanized iron, excepting the ends, which are of wood, double thick, with grain crossed. The upper edge is strengthened with heavy galvanized angle iron and the corners reinforced with steel clips. This tub will hold 12 bushels.

## Carriers for Angle Track

We furnish complete litter and feed carrying equipment for dairy barns. The cut on opposite page shows our angle track carrier. An equipment of this kind installed in a dairy barn may be made very comprehensive at a reasonable cost, and will save an immense amount of time and labor in the barn work. The same system may include litter, feed and milk can carriers with suitable switches at necessary points.

### Feed Carrier

Consists of feed tub made of hardwood and bound with galvanized iron. Extreme length is 67 inches, width 25 inches, depth 22 inches, and holds ten bushels. Both ends are sloping, so that two men can feed from it. Bails are oval-shape and permit of greatest freedom in shoveling. They extend nearly to the bottom of the tub and are made of channel steel. The hoisting arrangement on the No. 324 tub enables the operator to lift a heavy load of feed quickly and easily. The No. 326 tub is the same construction, but without the hoist.

### Milk Can Carrier

See page 431 for illustration and prices.

Send us a sketch of your barn and we will quote on complete outfit.

#### Price List of Conveyors and Fixtures for Double Angle Track

Litter carrier with No. 2 tub.....	each, \$32.00
Litter carrier with No. 4 tub.....	each, 34.00
Litter carrier with No. 6 tub.....	each, 36.00
Litter carrier with No. 8 tub.....	each, 38.00
Feed carrier, No. 324.....	each, 38.00
Feed carrier, No. 326.....	each, 32.00

Double Angle Track. Consists of two pieces of  $\frac{3}{8}$ -inch angle steel riveted together. Weight per foot, 2 lbs.

Per foot.....\$0.18

Hangers for Double Angle Track. The 6-inch is the regular length unless track must be lowered to clear obstructions.

6 inches (regular length), per dozen.....	\$1.30
11 inches (clears 6-inch beam), per dozen.....	1.80
13 inches (clears 8-inch beam), per dozen.....	2.10
15 inches (clears 10-inch beam), per dozen.....	2.40
Joist Bracket, per dozen.....	.70

Ridge Pole Hanger, for 2-inch ridge pole or post outside of barn..... 1.50

Large Screw Hanger. Screws into joist. Can be used in place of regular hanger and joist bracket.

9½-inch (regular length), per dozen.....	\$1.50
14½-inch (clears 6-inch beam), per dozen.....	2.00
16½-inch (clears 8-inch beam), per dozen.....	2.30
18½-inch (clears 10-inch beam), per dozen.....	2.60

Double Eye Hangers, for very high ceilings.

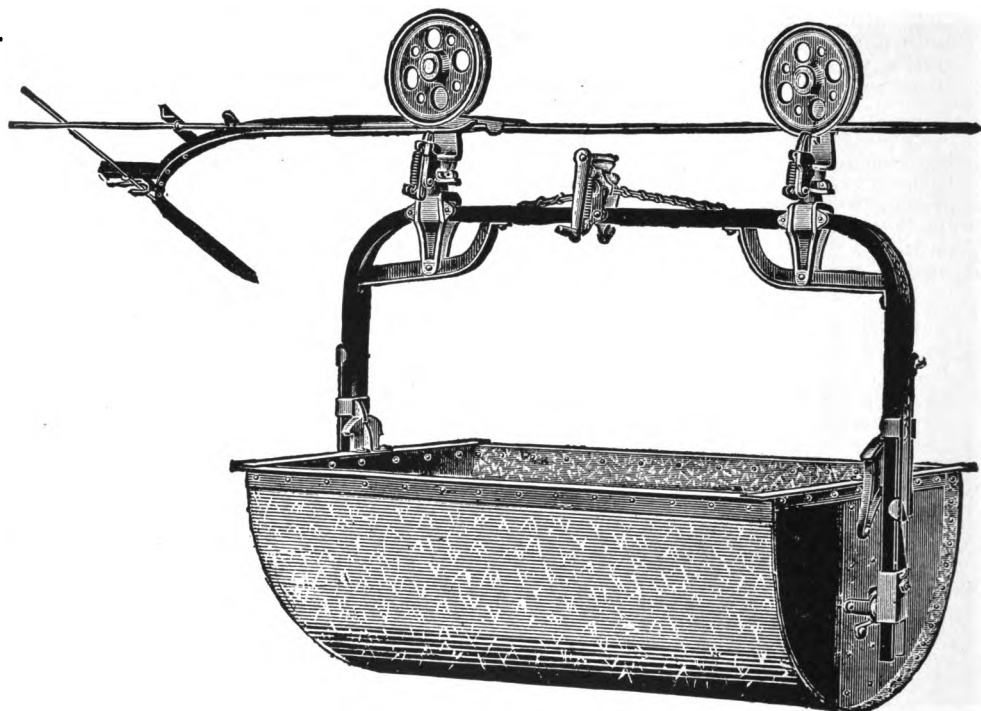
15 inches long, per dozen.....	\$2.00
20 inches long, per dozen.....	2.40

Screw eyes can be used in place of joist brackets or ridge pole hangers, per dozen..... 1.00

Wall Bracket for Ridge Pole. Supports end of ridge pole at barn. So shaped that it does not interfere with operation of door.

Each.....	\$1.20
Two-way overhead switch, each.....	3.00
Three-way overhead switch, each.....	4.00
Removable section of track, for barn door opening, each.....	.80
Track curve, for use without switch; 90 degrees, radius 4 feet, each.....	2.50
Track curve, for use with switch, each.....	2.50
Stop block, for end of track, each.....	.20
Automatic dumping and returning device, each.....	8.00
Idler for automatic dump, supports chain, each.....	1.00
Chain for automatic dump, per foot.....	.05
All-steel swinging boom, for outside of barn, per foot.....	1.00
Guy rods for above, with welded eye, each.....	.10

## Litter Carrier for Rod Track—Roller Bearing



This cut illustrates the car taking a curve. The keeper automatically unlocks as it strikes the curve, thus allowing tracker wheel to swivel, and also the tracker wheel still remaining on the rod track is locked rigid and parallel with the rod track, thus overcoming any tendency of wheel to run sideways and bind. This position is maintained until wheel strikes curve, then the keeper unlocks and allows wheel to swivel.

There is no trouble about this carrier turning either a right hand or a left hand switch curve; as it is only necessary to lift the wheels one at a time from the track and swivel them around, according to whether it is desired to run the carrier on a left-hand or right-hand switch.

THE BALL provides for three adjustments, thus lowering and raising the tub to the desired height.

THE ALL-STEEL TUB dumps either way, locks at both ends, and thus holds absolutely rigid. Impossible for it to jump the track.

In operation the carrier is automatic. By putting up the rod at the proper angle the carrier, when loaded, can be made to run out and dump at the desired point by simply giving it a vigorous shove. When dumped, the empty carrier returns to the barn automatically. The tub of the carrier is dumped by means of a trip block, which can be placed at any desired point on the track. This carrier can be instantly secured to the track at any point to hold it from moving along the track while loading.

Weight of carrier without tub, 35 pounds. No. 2 tub weighs 45 pounds.

### Price List of Conveyors and Fixtures for Rod Track

C. P. litter carrier for rod track,		Rod track, No. 0000, per 100 ft...	\$ 5.00
No. 2 tub.....	\$24.00	Tension Bolt, $\frac{3}{8}$ -inch.....	1.00
Spring track support.....	3.00	Switch or curve.....	4.00
Clamp for rod track.....	.30	Anchor rod and turnbuckle.....	4.00
Loop clamp.....	.40	Anchor Rod.....	2.00
Angle brackets.....	2.00	Returning spring and end stop...	1.20

Subject to Discount.

Send us a sketch of your barn plan and we will gladly submit a sketch showing the track properly installed and give you a list of the fixtures necessary.



## Milk Can Carriers

### And Overhead Conveyors For Angle or Rod Track



#### Overhead Conveyor and Hoist

Practically the same as single milk can carrier without the steel bar and can hooks. Furnished for either double angle or rod track. Capacity 1500 lbs. Weight with hoist, complete, 17 lbs. In ordering, specify kind of track to be run on.

Price .....\$9.00

The **Single Can Carrier** consists of a hoist fitted to a trolley adapted to run on rod or double angle track, as desired. On account of the automatic locking device the load can be instantly locked at any desired elevation, and is instantly released for lowering. Hoist is operated by one rope and is easy to handle. The can may be lowered to within an inch from the floor, thus perfect cleanliness is assured.

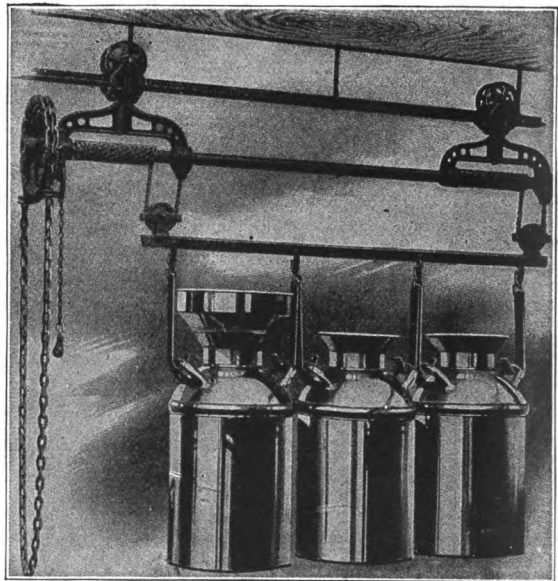
Weight, complete, 25 lbs. In ordering, specify whether wanted for rod track or double angle track.

Price .....\$10.00

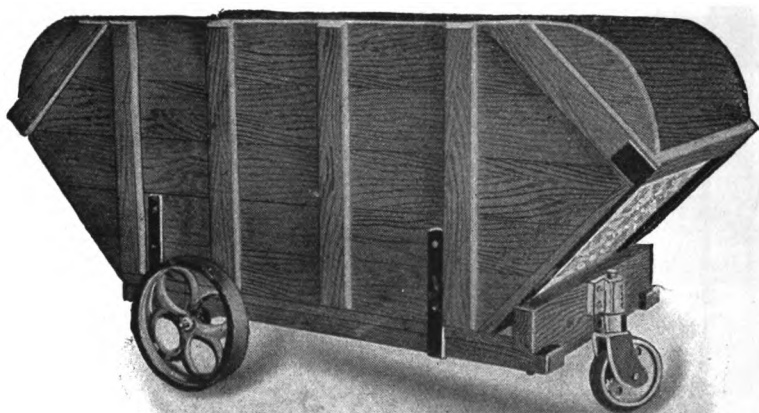
The **Three-Can Carrier** carries either one, two or three milk cans. Strainer can be used without detaching cans. Cans may be lowered to within an inch from the floor. Cut shows carrier for double angle track; it is furnished for either double angle or rod track. In ordering, specify which is wanted.

Weight, complete, 65 lbs.

Price .....\$22.00



## Feeding Truck



This truck is very convenient for feeding ensilage and ground feed. The sloping ends make it easy to shovel from either end. The caster wheel works easily and enables the truck to get around the stable, making short turns to get through doors and into feed alleys. The weight is so nicely balanced that it can be moved about with very little effort. Made of clear lumber, with side cleats. Bottom of No. 18 steel. Extreme length 68 inches, width 26 inches, height 24 inches. Capacity 16 bushels. Weight 179 pounds.

Price F. O. B. factory, net.....\$20.00

## Capper's 8-Year Record of the Dairy Cow

### A Valuable Record Book

Shows the weekly performance of a cow for the week, the "four week" and finally that for the entire milking year, arranged in comparative form, so that the dairyman may see at a glance how one week, or one "four weeks" or one year's production compares with the same periods of a previous year. Butter fat test may be recorded weekly, every two weeks or each four weeks, as desired. Space for record of one cow for 8 years on each double page. Fifty double pages. A valuable record book for the dairyman who strives to improve his herd. Size, 13½x10 inches, bound in board with leather back and corner.

Price, each.....\$3.00

# Calf Weaners, Feeders and Stock Markers



Rice Calf Weaner.

## Rice Calf Weaner

Prevents calves or cows sucking themselves or each other, but does not interfere with eating or drinking and cannot injure the animal. Easily attached to the animal's nose. Made in three sizes for animals of different ages.

### Net Prices

No.	Each	Doz.
1 Weaner for calves until 1 yr. old.	\$0.50	\$5.00
2 Weaner for calves 1 or 2 yrs. old.	.75	8.00
3 Weaner for full grown animals.	1.00	10.00

## Shaw Calf Weaner

Strong metal basket fastens to head with halter. Doesn't interfere with eating or drinking. Made in three sizes. Complete, ready for use.

### Net Prices

No.	Each	Doz.
1 Weaner, calf size.....	\$0.30	\$3.25
2 Weaner, yearling size.....	.40	4.10
3 Weaner, cow size.....	.50	5.25



Shaw Calf Weaner.



Small's Calf Feeder.

## Small's Calf Feeder

Fastens to the wall and cannot be upset. A perfect substitute for the natural method. Calves do not need to be taught to use it. Easily kept clean and sanitary. Add 60 cents for postage if sent by mail.

### Net Prices

Small's Feeder, complete.	Each.....	\$2.50
Extra nipples for feeder.	Each.....	.25
Five for .....		1.00

## Metal Ear Labels

Name on one side and numbers from 1 up, or any numbers desired on opposite side. Very light and will not tear out. If more than six letters in your name, initials only can be put on labels. If sent by mail, 25 cents per 100 extra.



Metal Ear Labels.

### Net Prices

Metal labels, per lot of 25.....	\$1.00	Metal labels, per lot of 100.....	2.00
Metal labels, per lot of 50.....	1.25	Oval punch for ear labels, each...	1.00



Ear Buttons.

## Ear Buttons

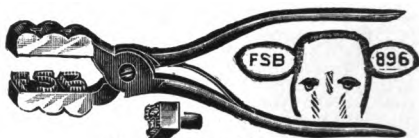
Made of pure aluminum. Clinches tight. Cannot come out. Name and address on front side. Numbers on reverse side. Maximum number of letters for name and address, 19.

### Net Prices

Per lot of 25 ear markers.....	\$1.15
Per lot of 50 ear markers.....	1.75
Per lot of 100 ear markers.....	3.25
Per lot of 500 ear markers.....	15.00
Per lot of 1000 ear markers.....	27.00
Punch and pliers, each.....	1.00

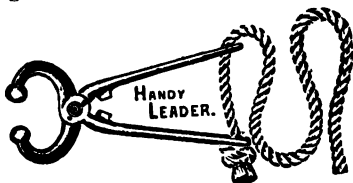
## Tattoo Ear Markers

The only permanent marking that does not disfigure the animal. Cannot be removed or changed, and therefore prevent frauds and misunderstandings. The marker is complete with any three letters or figures desired. Extra letters and figures can be furnished, so that one marker can be used for several brands if desired. Letters are  $\frac{1}{2}$ -inch square and are cut out of solid metal. In using, the letters are first smeared with oil, then punch the ear, then rub the oil well into the punctures with the thumb and fingers. Oil is sold separate from the marker. Each bottle contains enough to mark 500 ears. It is also furnished in stick form.



Tattoo Ear Marker.

Marker with three letters or figures.....	\$2.00
Extra letters or figures. Each.....	.35
Tattoo Oil, 2 oz. bottle. Each.....	.50
Large stick Tattoo Oil. Each.....	1.00



## Handy Leader

Indispensable to the stockman. Made of malleable iron. Holes in handle to slip rope through. Rope is not included in price.

Handy Leader. Each.....\$0.25

## Horn Balls

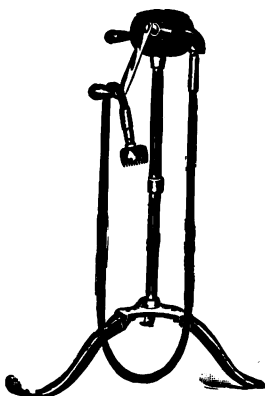
Solid Brass, highly polished, and fit any horn. Finished with fine thread so they can be screwed on horn, then fastened with pin. Made in two sizes.

$\frac{3}{4}$ -inch size, dozen.....	\$0.75	Per 100.....	\$6.00
$\frac{7}{8}$ -inch size, dozen.....	1.00	Per 100.....	8.00



Horn Ball.

## The Stewart Cow Clipping Machine



Stewart Cow Clipper.



Stewart Cow Clipper in Use.

For clipping the flanks and udders so they may be easily cleaned before milking. Used also to clip the entire body of cows once or twice a year. Machine has ball bearings and enclosed cut gears that run constantly in oil. Six feet of high grade flexible shaft, and the celebrated Stewart one tension nut knife. Machine turns easy, clips fast and is fully guaranteed. Weight, boxed, 36 lbs.

Stewart cow clipping machine, complete.....\$7.50

## Woodward's Watering Basin

The advantages of having a constant supply of water always before the cows are too well known to need argument. The Woodward Basin is one that we can recommend as fulfilling every requirement. Easily attached.

Price of each Basin with strainer and trap, well painted, and with valve and seat, valve cage of white metal, as shown in cut, and with saddle and clip for attaching to main pipe.

Each .....	\$2.00
Supply tank, galvanized, 24x12x10, with outlet and inlet connections .....	2.00
Supply tank, copper, 24x12x10, with outlet and inlet connections .....	4.00
Ball valve and float, brass .....	2.00

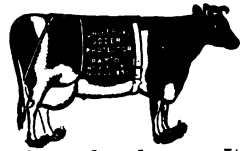
We will also sell pipes and fittings at lowest rates and will cut pipes to fit any order from measurements furnished, but **will not be responsible for anything except that they shall be strictly according to the plan sent.**



## The Universal Udder Protector and Calf Weaner

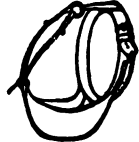
Designed to prevent the accumulation of manure and filth on the cow's bag. It consists of a bag, made from 8-ounce duck, closely fitting and completely covering the udder, securely retained by a supporting apparatus that is simple and easy of adjustment. Made in three different sizes to fit all ordinary cows.

Also an effectual calf weaner; impossible for a calf to have access to the teats, and preventing cows so disposed from sucking themselves for the same reason. Protects the teats from cold; prevents them from becoming chapped and sore. It is valuable as a sanitary measure. Owners of milch cows cannot afford to be without this valuable device.



### Prices

	Each.	Per Doz.
Large size protector .....	\$2.50	\$20.00
Medium size protector .....	2.50	20.00
Small size protector .....	2.50	20.00



## Trapps' Patent Cow Tail Holder

### Prices

Each .....	\$0.15
Per two .....	.25
Per doz. ....	1.40
6 doz. ....	per doz., 1.25
12 doz. ....	per doz., 1.00

## Searchlight Electric Alarm Clock

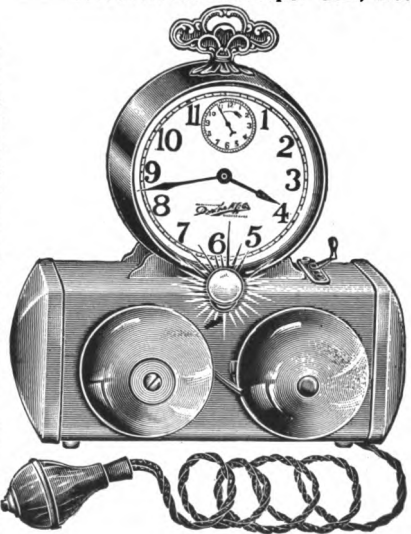
A reliable alarm clock is an important part of the dairyman's equipment. The illustration shows one that we can recommend in every particular. The alarm rings at the hour you set it for and continues to ring loud and clear until you get up. No danger of oversleeping. Alarm will ring for hours unless you get up and shut it off; it will not stop for a while and let you go back to sleep—it gets you up.

The electric light attachment is very convenient. By placing the push button within reach you can turn on the light and see the time at night.

It can be used as a call bell and electric alarm by simply arranging the connections to the battery so that when the button is pushed bell will ring. Very handy in the sick room or as a signal.

It is a very handsome clock and an accurate timekeeper. The battery is included in with the clock in the metal base. We supply the very best batteries and a single one should last for two years and can be renewed at small expense.

Clock, including battery and cord with pear push .....	Each \$3.75
Extra battery .....	.50



## Green Mountain Silos



18x30 Green Mountain Silo

We manufacture Green Mountain Stave Silos in our own silo factories at Fort Atkinson, Wis., and Rutland, Vt. The Green Mountain has achieved a reputation for quality and durability, due to upward of a dozen years of use, that is in itself a safe guide to wise silo buying.

That every milk producer should have a silo scarcely needs argument.

In no other way is it possible to produce so large an amount of good feed from an acre of land as by raising corn and making the same into silage. The succulent silage is the best possible substitute for June pasture, and is relished by cows at all seasons of the year. In winter cows can be fed a palatable balance ration that will keep them up to summer flow.

A silo of any material or type built according to the right principles for preserving silage is better than none. We believe, however, that a good stave silo will, all things considered, give the best satisfaction. The purchaser of a Green Mountain Silo takes no chances whatever on an experiment, but can purchase and erect it at a known cost, and when filled he knows that it will produce perfect silage.

### Lumber

Our lumber for silos is purchased especially for the purpose. It is sawed extra thick, and must be sound and free from loose knots that will injure it for silo purposes. We furnish several kinds of lumber, and prices of course vary according to the market price of the several kinds. We do not, however, use any lumber that is not suited to the purpose or that experience has shown is not durable.

### Hoops and Lugs

We place steel hoops about thirty inches apart, using nothing less than  $\frac{3}{4}$  inch in diameter, and put some  $\frac{3}{4}$ -inch hoops near the bottom, where the greater strain comes. The number of  $\frac{3}{4}$ -inch hoops furnished depends on the height of the Silo.

## Green Mountain Silos—Cont.

We do not cut away the metal to thread the ends, thus weakening the rod 50 per cent. You know that a rod or bolt with cut thread always breaks in the thread. We use the cold pressed, enlarged thread that is just as strong in the thread as in the rod itself.

The lugs are made of malleable iron and are twice as heavy as the ordinary tank lugs so often used on silos. We have never known of a broken lug on a Green Mountain Silo.

Six inches of thread is on each end of the rods so that any shrinking can be taken up.

### Door Fronts and Doors

Green Mountain Patented Door Frames or Fronts are very simple, yet the most efficient that can be made.

The frame is of wood beveled and matched at each side to fit the staves, making a smooth joint same as the staves.

The door has a bearing on all of its four sides, which is impossible with the so-called continuous fronts. The button is on the outside of Silo and draws the doors securely to place. There being only a few inches between the doors (6 inches to 10 inches), and the door openings 22 inches wide and 24 inches high, the openings are practically continuous, while the frame is very substantial and cannot be crushed in or pinch the doors.

The hoops are placed on the partitions between the doors.

The Green Mountain Front is durable, strong, rigid, and the **doors are tight.**

All the doors are alike and are so made that they **will not swell and stick.**

### Erection

It is easy to put up a Green Mountain Silo with the full directions we send to each purchaser.

### Prices

Lumber and steel vary so much in price from time to time that we cannot well quote net prices in a general catalog, but can give closer prices by corresponding with you when ready to buy. Let us know sizes wanted and we will quote promptly.

### Sizes

As a matter of convenience to our patrons in helping them select the size of silo required, we give below partial list of sizes, the capacities, and number of stock that can be fed:

Dimensions	Tons Capacity	No. of Cows it will keep for 6 months 40 lbs. per day	Dimensions	Tons Capacity	No. of Cows it will keep for 6 months 40 lbs. per day
10 x 20	28	7	16 x 22	81	23
10 x 22	31	8	16 x 24	86	25
10 x 24	34	9	16 x 26	95	26
10 x 26	37	10	16 x 28	102	29
12 x 20	40	11	16 x 30	108	31
12 x 22	45	12	18 x 24	110	31
12 x 24	50	13	18 x 26	120	33
12 x 26	54	14	18 x 28	130	35
12 x 28	57	15	18 x 30	139	38
12 x 30	60	16	20 x 24	135	36
14 x 22	62	17	20 x 26	147	38
14 x 24	67	19	20 x 28	158	43
14 x 26	72	21	20 x 30	170	46
14 x 28	78	22	20 x 36	206	55
14 x 30	83	23	20 x 40	230	63

### Shipping Dates

Silos will be shipped at the time specified from April 1 to October 1, provided you get in your order early enough. We usually have more orders for July and August delivery than we can possibly make. By getting your silo early you can erect it when other work is not pressing.

### Special Catalogs

We issue a special catalog on silos, with many illustrations of silos in use, and showing our facilities for good work and prompt deliveries. It also contains some hints on erection and building foundations of value. It will be sent free on request.

# Extra Parts for Wizard Agitator

List of extras for former style machines furnished on request.  
In ordering parts marked thus \* state capacity of vat.

No.	Name of Part.	Price Each.	No.	Name of Part.	Price Each.
773	Inlet Tube Packing Nut (small) .....	\$ 5.35	2644	3" Lock Nut on Outlet Nipple	\$0.85
2647	Inlet Tube Packing Nut (large) .....	10.35	2646	Inlet Tube (large).....	3.00
1127	Cone Shifter Collar.....	1.20	2647	Inlet Tube Packing Nut (large) .....	10.35
1147	¾" Hex. Nut on No. 2270.....	.05	2648	Inlet Tube Gland (large)....	6.40
1150	Drive Shaft Collar.....	1.20	2649	Inlet Tube Bushing (large)....	3.75
1197	½"x1½" Adj. Screw for No. 1448 .....	.05	3404	Drive Shaft End Bearing....	6.00
1202	¾" Pin for Friction Clutch Dog .....	.05	3963	2" Lock Nut on No. 4158-1589 .....	Takes 3 .40
1249	Coil Shaft Packing Nut R. and L. ....	6.80	3967	Hinge on Ice Box Cover....	Takes 3 .15
*1419	Coil Bearing Lock Nut. R. and L. ....	2.00	4142	Collar in Rear Elevating Arm on Bracket.....	Takes 2 .40
1429	Inlet Tube Bushing (small) .....	1.00	4144	Cover Lock Spring.....	.50
2649	Inlet Tube Bushing (large)....	3.75	4149	Coil—Complete. Price depends on size of machine.	.40
1429½	Inlet Tube Gland (small)....	1.25	4157	Packing for Inlet Tube....	.60
2648	Inlet Tube Gland (large)....	6.40	4158	Water Outlet Nipple.....	.75
*1441	Front Central Tube Collar.....	2.25	4530	Pump Clutch Shifter Lever....	.96
*1441½	Rear Thrust Bearing Plate.....	.90	4977	Ball Retainer, on Rear Bearing .....	9.80
*1441½	Rear Central Tube Collar.....	2.25	5005	Cream Outlet .....	1.40
*1442	Central Tube Bearing (small). R. and L. ....	5.00	5053	Cone Shifter Lever.....	.80
1442½	Central Tube bearing (large). R. and L. ....	7.00	5054	Cone Shifter Lever Cap.....	.45
1445	Stuffing Box Wrench.....	2.90	5055	Cone Shifter Bracket.....	.35
1445½	Lock Nut Wrench.....	2.90	5162	Pump Shifter Lever Bracket	Legs for 300 to 500 gals. ....
1446	Body Casting Friction Clutch Shifter Cone .....	6.00	5200	Legs for 300 to 500 gals. ....	Takes 2 10.85
1447	Friction Clutch Ring.....	1.10	5249	Legs for 600 to 1,000 gals. ....	Takes 2 16.00
1488	Friction Clutch Dog.....	.40	5296	Gutter Cock Flange.....	1.60
1557	12"x4" Pulley .....	8.50	5308	Gutter Cock Plug.....	.96
1561	Front Elevating Arm for Cover .....	Takes 2 2.40	5338	Oil Pan .....	1.25
1567	Cover Bracket.....	Takes 4 .30	5542	Inlet Support.....	1.20
1580	Rear Elevating Arm for Cover .....	Takes 2 6.00	5546	Pump Clutch Sprocket 100 to 400 gals. ....	2.60
1581	Rear Elevating Arm Bracket. R. and L. ....	2.00	5547	Pump Clutch Sprocket 500 to 1,000 gals. ....	3.15
1582	Elevating Pinion.....	Takes 2 1.00	5548	Collar on Nos. 5547, 5546... ..	.30
1583	Elevating Crank .....	1.75	6456	Leg for 75 to 200 gals. ....	Takes 2 8.00
1589	Overflow Pipe Seat.....	1.75	6599	Thrust Bearing Balls.....	Takes 8 1.00
*1590	Overflow Pipe .....	1.50	6600	Packing for Expansion Ell. ....	.60
1591	Front Elevating Arm Bracket. R. and L. ....	.80	ROTARY PUMP EXTRAS.		
1639	Cap for Drive Gear Bracket (No. 2031) .....	Takes 2 .50	4997½	Chain Tightener .....	.50
1826	Cone Shifter Pipe Roller....	.05	4998½	Brass Union Ell Packing Nut .....	2.40
2027	Spiral Pinion, on Drive Shaft .....	2.50	4539½	Brass Union Ell.....	4.80
*2028	Spiral Gear, on Central Tube .....	6.50	5445	Pump Base .....	8.75
2031	Drive Gear Bracket (small)....	13.20	5540	Sprocket .....	2.80
2031½	Drive Gear Bracket (large)....	14.00	6580	Cylinder .....	6.00
2251	End Bearing Cap.....	.40	6581	Cylinder Head .....	2.00
*2267	Cover Elevating Shaft.....	3.60	6582	Cylinder Cap Screws.....	Takes 4 .05
2268	Inlet Tube (small) 1" size....	2.00	6583	Cam Head .....	5.00
2646	Inlet Tube (large) 1½" size....	3.00	6584	Cam Head Shaft.....	3.50
2269	Inlet Tube Support Pipe.....	Takes 2 .30	6585	Cams (2 in a set).....	Takes 2 2.00
2270	Inlet Tube Support Stud.....	Takes 2 .20	6586	Cam Springs (2 in set).....	Takes 2 .10
*2271	Cover Elevating Rod.....	Takes 2 .75	6587	Shaft Collar .....	.40
2276	¾" Collar on 2271.....	Takes 4 .10	6588	Lock Screw and Wheel.....	.75
2278	Front Arm Collar.....	Takes 2 .25	6589	Lock Arm .....	1.50
2279	Drive Shaft. Price depends on size of machine.		6590	Stuffing Box Nut.....	.45
*2505	Central Tube Packing.....	.50	6591	Stuffing Box Packing.....	.40
2538	3" Cream Outlet Nipple.....	7.25	6592	Tightener Roll .....	.40
2634½	3" Perfection Gate Valve....	3.60	6594	Tightener Roll Stud.....	.20
			6595	Chain—up to 500 gals. ....	See Chain List
			6634	Chain—600 to 1,000 gals. ....	



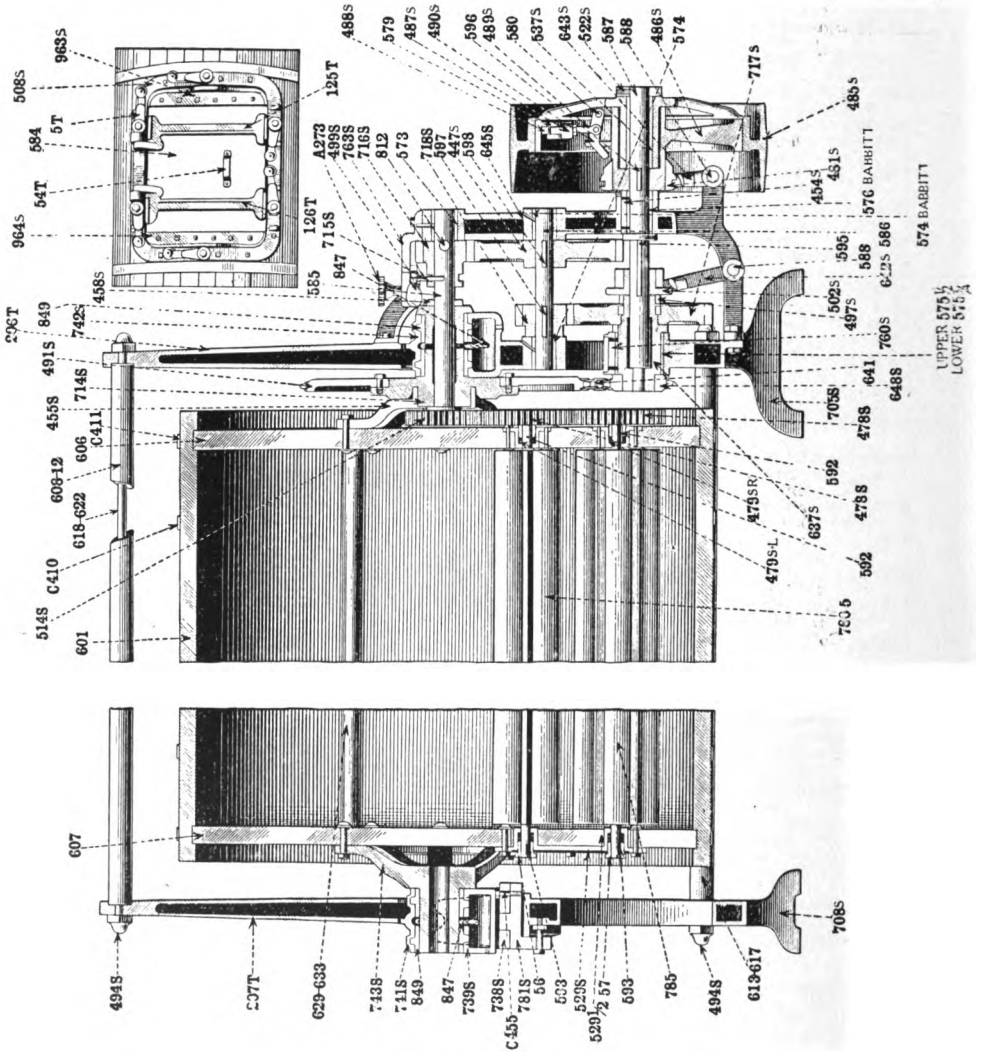
# Extras for Eclipse Cream Ripener

Always state size and serial number of vat when ordering extra parts.

No.	Name of Part.	Price Each.	No.	Name of Part.	Price Each.
515	$\frac{3}{8}$ "x $\frac{1}{2}$ " Set Screw on Gear and Pinion.....Takes 4	\$0.12	5248	Rear Packing Box Wrench, 200 to 400 gals.....	\$0.80
712	Packing Nut (Inlet) 200 to 400 gals. ....	2.60	5249	Legs, 600 to 1,000 gals.....Takes 2	16.00
773	Packing Nut (Inlet) 800 to 1,000 gals. ....	5.35	5277	Cover Support Castings.....	Takes 2 .20
1001	Spanner Wrench, 200 to 400 gals. ....	.60	5328	Bearing Screw Gland, 500 to 700 gals.....Takes 2	20.00
1001½	Spanner Wrench, 500 to 1,000 gals. ....	.75	5329	Bearing, 500 to 700 gals. R. and L.....	28.00
1147	$\frac{5}{8}$ " Hex. Nut on No. 6547.....Takes 3	.12	5337	Drip Pan, 200 to 700 gals....	2.00
1429	Inlet Tube Gland, 500 to 1,000 gals. ....	1.00	5536	Shifter Rod Knob.....	.05
1429½	Inlet Tube Bushing.....	2.00	5610	Drive Shaft Bracket, 800 to 1,000 gals. ....	10.50
1535	12", 3 Pulley, 200 to 700 gals. T. and L.....Takes 2	3.40	5611	Inlet Support, 800 to 1,000 gals. ....	3.00
1856	$\frac{1}{8}$ "x $\frac{3}{4}$ " Set Screw on No. 5229.....Takes 3	.05	5612	Front Bearing Lock Nut, 800 to 1,000 gals.....	5.25
1972	3-18"x1" Set Screw on Pulley.....Takes 2	.05	5613	Bearing Screw Gland, 800 to 1,000 gals. ....Takes 2	17.40
2034	2" Overflow Nipple.....	.70	5614	Lock Ring on Bearing, 800 to 1,000 gals. ....	2.50
2041	$\frac{3}{8}$ "x $\frac{3}{4}$ " Set Screw.....Takes 2	.05	5614½	Lock Ring on Bearing, 500 to 700 gals. ....	2.00
2045	$\frac{3}{8}$ "x $\frac{3}{4}$ " Cap Screw.....Takes 6	.05	5614½	Lock Ring on Bearing, 200 to 400 gals. ....	1.65
2110	$\frac{1}{8}$ "x $\frac{3}{4}$ " Thumb Screw.....	.08	5615	Bearing R. and L., 800 to 1,000 gals. ....	18.00
2538	Outlet Nipple.....	5.50	5616	Central Tube Gear, 800 to 1,000 gals. ....	5.50
2644	3" Lock Nut.....	.85	5617	Drive Pinion, 800 to 1,000 gals. ....	2.00
3086	$\frac{1}{8}$ "x $\frac{3}{4}$ " Set Screw.....Takes 3	.05	5637	Rear Packing Box Wrench, 800 to 1,000 gals.....	2.10
3093	Bearing Packing, 200 to 400 gals. ....Takes 4	1.20	5662	Inlet Packing.....Takes 4	.40
3094	Bearing Packing, 800 to 1,000 gals. ....Takes 4	1.60	5663	Coll Head Packing, 200 to 400 gals. ....Takes 4	1.00
3967	Cover Hinges, per pair.....Takes 2	.80	5826	Rear Packing Box Wrench, 500 to 700 gals.....	1.00
4985	Outlet Casting on Pan.....	9.80	5987	14"x4" Loose Pulley, 800 to 1,000 gals. ....	7.50
4995	Overflow Casting, 500 to 1,000 gals. ....	6.80	6004	Shifter Fork, 800 to 1,000 gals. ....	.50
4996	Overflow Casting Cap, 500 to 1,000 gals. ....	1.75	6009	Shifter Bracket, 800 to 1,000 gals. ....	.80
5191	Bearing R. and L., 200 to 400 gals. ....	15.00	6063	Cover Cam .....Takes 6	.50
5192	Bearing Screw Gland, 200 to 400 gals. ....Takes 2	8.30	6064	Cover Cam Hinge.....Takes 6	.35
5194	Coll Head Packing Nut, 200 to 400 gals.....Takes 2	6.65	6117	Drip Pan, 800 to 1,000 gals....	2.00
5195	Coll Head, 200 to 400 gals....Takes 2	18.00	6540	Jacket (varies with vat).	
5196	Central Tube Ring, 200 to 400 gals. ....	9.00	6541	Cover (varies with vat).	
5197	Drive Shaft Bracket, 200 to 700 gals. ....	4.00	6542	Vat Pan (varies with vat).	
5198	Drive Pinion, 200 to 700 gals. ....	1.20	6543	Coll (varies with vat).	
5199	Central Tube Gear, 200 to 700 gals. ....	2.25	6544	Central Tube (varies with vat).	
5200	Legs, 300 to 500 gals..Takes 2	10.80	6545	Tube Lining (varies with vat).	
5202	Coll Head Gland, 500 to 1,000 gals. ....Takes 2	2.50	6546	Inlet Support Pipe.....Takes 3	.25
5203	Coll Head Packing Nut, 500 to 1,000 gals. ....	9.00	6547	Inlet Support Stud....Takes 3	.25
5204	Coll Head, 500 to 1,000 gals.....Takes 2	14.85	6548	Drive Shaft.....	
5205	Inlet Packing Nut, 500 to 700 gals. ....	5.00	6549	Shifter Fork Rod.....	.40
5206	Central Tube Ring, 500 to 1,000 gals. ....	11.45	6550	Inlet Nipple .....Takes 6	1.75
5212	Coll Support Wing, 200 to 400 gals. ....	7.00	6551	Cam Hook .....Takes 6	.20
5213	Coll Support Wing, 500 to 1,000 gals. ....	9.00	6552	Cover Support Spring.....Takes 2	1.60
5214	Coll Head Gland, 200 to 400 gals. ....	2.10	6553	Angle Iron Ends. Price varies with vat.	
5218	Overflow Casting, 200 to 400 gals. ....	5.45	6554	Band Iron Brace. Price varies with vat.	
5219	Overflow Casting Cap, 200 to 400 gals. ....	2.00	6555	Central Tube Plug.....	.70
5227½	Inlet Support, 200 to 700 gals. ....	1.50	6556	1½" Collar on Drive Shaft...	.30
5229	Gear Guard, 200 to 700 gals..	1.00	6557	1½" Collar on Center Tube, 200 to 400 gals.....Takes 2	2.00
524½	Shifter Bracket, 200 to 500 gals. ....	1.50	6558	2½" Collar on Center Tube, 500 to 700 gals.....Takes 2	2.40
5245½	Front Bearing Lock Nut, 200 to 700 gals. ....	3.15	6559	2½" Collar on Center Tube, 800 to 1,000 gals....Takes 2	4.50
			6560	$\frac{3}{8}$ "x $\frac{3}{4}$ "x3" Key .....Takes 2	.05
			6562	Bearing Packing, 500 to 700 gals. ....Takes 4	1.20
			6563	Coll Head Packing, 500 to 1,000 gals. ....Takes 4	1.60
			6564	$\frac{3}{8}$ "x $\frac{3}{4}$ "x2½" Key in Gear....	.05
			6565	$\frac{1}{4}$ "x $\frac{1}{4}$ "x2½" Key in Pinion....	.05
			6598	$\frac{1}{8}$ "x2½" Lag Screw..Takes 10	.05

# Victor Chain Drive Churn

## Repair Chart



# Victor Chain Drive Churn Parts

In effect October 1st, 1911. In ordering extras, always give serial number of churn, which is stamped in wood below door frame. Items preceded by (\*) are not shown on plate.

## Parts of Frame.

705S	Front leg.....	\$25.00
708S	Rear leg.....	22.00
206T	Upright on front leg for top stringer.....	8.00
207T	Upright on rear leg for top stringer.....	6.00
645S	Spider .....	15.00
763S	Bracket for top shift- er .....	3.50
608	Top stringer for size C .....	3.00
609	Top stringer for size D .....	3.50
610	Top stringer for size E .....	3.75
611	Top stringer for size F .....	4.00
612	Top stringer for size G .....	4.25
613	Bottom stringer for size C .....	3.50
614	Bottom stringer for size D .....	3.75
615	Bottom stringer for size E .....	4.00
616	Bottom stringer for size F .....	4.25
617	Bottom stringer for size G .....	4.50
618	Rod for top stringer, size C .....	1.80
619	Rod for top stringer, size D .....	1.90
620	Rod for top stringer, size E .....	2.00
621	Rod for top stringer, size F .....	2.10
622	Rod for top stringer, size G .....	2.20
*623	Rod for lower stringer, size C .....	1.80
*624	Rod for lower stringer, size D .....	1.90
*625	Rod for lower stringer size E .....	2.00
*626	Rod for lower stringer, size F .....	2.10
*627	Rod for lower stringer, size G .....	2.20
494S	Nut for stringer.....	.50

## Rear End Bearing Parts.

743S	Rear gudgeon, 2 roll..	\$12.50
741S	Cap for rear bearing..	1.50
849	Babbitt bushing.....	.75
*849½	Bronze bushing, inter- changeable with 849.	1.75
847	Chain in automatic oiler .....	.50
739S	Bearing box.....	3.50
738S	Cradle for rear bear- ing .....	3.00
781S	Cradle plate for rear bearing .....	2.00
C45S	Saddle bolt on rear leg	.35
*650S	Rear gudgeon, 4 roll..	12.50

## Front Main Bearing Parts.

455S	Front gudgeon, 2-roll, part on drum.....	\$ 8.00
714S	Hub gudgeon for sprocket, 2-roll.....	10.00
*649S	Front gudgeon, 4-roll, part on drum.....	8.00
*652S	Hub gudgeon for sprocket, 4-roll.....	10.00
742S	Main bearing cap.....	1.50
849	Babbitt bushing.....	.75
*849½	Bronze bushing, inter- changeable with 849.	1.75

847	Chain in automatic oiler .....	\$ 0.50
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## Lower Front Leg Bearing.

637S	Sleeve clutch (sprock- et end of drive shaft)	6.00
*795	Roller for sleeve clutch, takes 3, each.	.25
575½	Half bushing, upper part, babbitt.....	1.50
575¾	Half bushing, lower part, babbitt.....	1.50
760S	Bearing cap.....	1.50
*575	Half bushing, bronze, interchangeable with 575½ .....	2.50
*575¼	Half bushing, bronze, interchangeable with 575½ .....	2.50

## Lower (Pulley) Bearing on Spider.

454S	Box cap.....	1.25
576	Bushing, 2 7/16x4 in., 1 15/16 in. bore, bab- bitt .....	1.25
*536S	Bushing, bronze, inter- changeable with 576.	2.00

## Intermediate Shaft Bearings.

574	Bushing in spider (babbitt), 2 3/16x3, 1 11/16 in. bore.....	1.00
*535S	Bushing in spider (bronze), inter- changeable with 574.	1.75

## Upper Shaft Bearing on Spider.

573	Bushing (babbitt), 2- 7/16x3x1-15/16 in ch bore .....	1.00
*534S	Bushing, bronze, inter- changeable with 573.	1.75

## Working Roll Bearings.

529S	Independent head, cast- ing .....	4.00
529½S	Independent head, wood part.....	1.00
56	Gland, right hand, for stuffing box.....	1.25
57	Gland, left hand, for stuffing box.....	1.25
479S-R	Stuffing box, R. H....	1.75
479S-L	Stuffing box, L. H....	1.75

## Shafts, Collars and Keys.

587	Main drive shaft (low- er shaft).....	\$ 4.00
586	Intermediate shaft.....	3.00
585	Gudgeon shaft (upper shaft) .....	3.00
592	Roll shaft, gear end, 1¼x17¾ in.....	3.00
593	Roll shaft, rear end, 1¼x16¾ in.....	3.00
*590	Key for roll shaft, ¼x5/16x2 in.....	.25
595	Key in main shaft, ¾x¾x5 in.....	.50
596	Key in friction ring, ¾x¾x2 in.....	.25
597	Key in pinion on in- termediate shaft, 5/16 x5/16x2¾ in.....	.25
598	Key in gear 447S on intermediate shaft, 5/16x5/16x2¼ in.....	.25
*600	Key in small sprocket 648S, ¾x¾x1½ in....	.25
458S	Collar, 1¼x3½ in., 1- 15/16 in. bore on up- per shaft.....	.75

## Victor Chain Drive Churn Parts—Continued

497S	Set collar on sleeve...	\$ 1.00
522S	Collar, 1x4 in., 1 15/16 in. bore (holds pulley on drive shaft).....	.75
*C409	Pins in roll shaft.....	.15
812	Straight pin in gudgeon shaft.....	.50
*813	Taper pin in gudgeon shaft.....	.50

## Gears.

447S	14 in. gear on intermediate shaft.....	\$ 5.00
478S	8 1/2 in. gear on roll shaft.....	3.00
502S	3 1/2 in. pinion and clutch on lower shaft.....	2.50
514S	7 in. gear on gudgeon shaft.....	2.75
716S	5 in. pinion on gudgeon shaft.....	3.50
717S	13 in. gear on drive shaft.....	5.50
718S	4 1/2 in. pinion on intermediate shaft.....	3.00

## Chain Drive Parts.

648S	Small sprocket, on drive shaft.....	\$ 4.00
491S	Large sprocket, bolts on 714S.....	15.00
*513S	Chain idler pulley.....	1.50
*577	Stud for idler.....	.75
641	Drive chain. Market prices. See catalog list.	
*759S	Arm for holding chain idler.....	.75

## Friction Clutch Pulley Parts.

485S	Pulley, 24 in.....	\$21.00
486S	Friction ring.....	8.00
487S	Link block for friction ring.....	.75
488S	Connecting link.....	.25
489S	Adjusting screw.....	1.00
490S	Friction dog.....	.50
481S	Friction cone.....	2.50
579	Pin, 1/2 x 2 in. for friction ring.....	.10
580	Pin, 1/2 x 2 1/2 in. for friction ring.....	.10
537S	Brass bushing in pulley.....	3.00

## Levers and Gear Shifters.

499S	Lever for top shifter..	\$ 1.00
642S	Gear shifting lever, changes speed.....	5.50
643S	Shifting lever for pulley.....	5.50
A273	Handwheel, locks top shifter.....	.85
715S	Top shifter fork.....	.75
*644S	Lock for gear shift lever 642S.....	1.00
*653S	Thumb piece on gear shift lever 642S.....	.25
*569	Lock for gear shift lever 642S.....	.50
*571	Pin in thumb piece 653S.....	.50
*570	Rod for gear shift lever 642S.....	.25
763S	Top shifter bracket on spider.....	3.50
588	Pin for levers, 1x4 1/4 in.	.75
*C440	Stud in top lever for handwheel.....	.15

## Door.

584	Wood part of door only.	\$1.00
963S	Bearing cleat, R. H....	1.25
964S	Bearing cleat, L. H....	1.25
125T	Door hinge, R. H.....	1.75
126T	Door hinge, L. H.....	1.75
54T	Door handle.....	.75

Price of door complete....\$7.75

When churn door is ordered, we always ship wood part with castings attached as per above list, unless expressly ordered otherwise.

## Door Frame Parts.

508S	Door frame casting...	\$12.50
5T	Adjustable cam.....	.75
*C56	Door cam spring, horizontal.....	.10
*C57	Door cam spring, vertical.....	.10
*C58	Adjusting plate for cam.....	.25
*C59	Fulcrum pin.....	.10

## Rolls and Drums.

780	Working roll for C churn.....	\$ 5.00
781	Working roll for D churn.....	6.00
783	Working roll for E churn.....	7.00
784	Working roll for F churn.....	8.00
785	Working roll for G churn.....	9.00

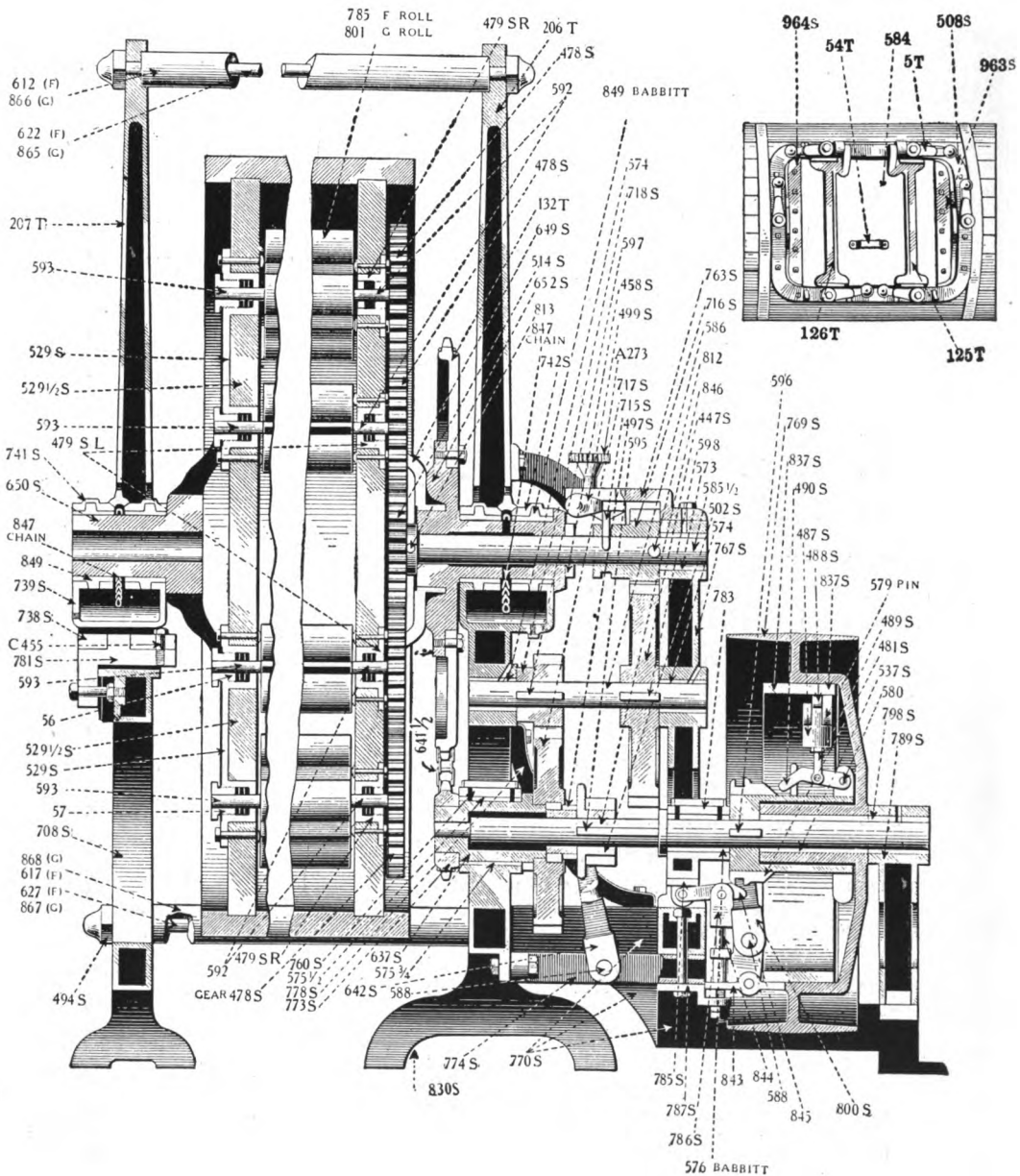
Write for prices on drums, drum heads, etc., stating size and style of churn and name of part or parts wanted.

## Miscellaneous Parts.

*B7	Glass holder.....	\$ 0.50
* 42	Hoop lug.....	.75
* 53	Wrench for packing nuts.....	.50
*581	Oil cup for pulley.....	1.00
*642	Strainer.....	1.00
*848	Bolt for hoop lug.....	.25
*C60	Bolt from upright and front leg, 3/8 x 8 in.....	.25
*C61	Bolt from upright and rear leg, 3/8 x 13 1/2 in.....	.25
C410	Hoop for center of drum, 3/4 x 1 1/2 in.....	2.00
C411	Hoop for edge of drum, 3/16 x 1 1/2 in.....	2.25
C413	Gear extractor.....	2.00
*530S	Balance weight.....	1.50
764S	Oil well cover.....	.15
*663S	Vent gate, complete...	1.00
*661S	Vent gate handle.....	.25
*662S	Vent gate slide.....	.25
*C408	Spring on vent gate...	.10
*664S	Churn gate, complete 2 in.....	3.00
*665S	Churn gate handle....	.30
*465S	Slide for churn gate...	.60
*572	Washer for churn gate	.10
*639	Spring on churn gate..	.10
*C441	Stop stud on churn gate.....	.15
*516S	Drum lock, part on drum.....	1.00
*517S	Drum lock, part on stringer.....	.50
*561	Lock arm for drum....	.75
*562	Holder for 517S.....	.15

# Victor Heavy Duty Churn

## Repair Chart



## Victor Heavy Duty Churn Parts

In effect October 1st, 1911. In ordering extras, always give serial number of churn, which is stamped in wood below door frame. Items preceded by (\*) are not shown on plate.

### Frame.

830S	Front leg (old style)...	\$28.00
708S	Rear leg .....	22.00
206T	Upright on front leg for top stringer .....	8.00
207T	Upright on rear leg for top stringer .....	6.00
*305T	Rear leg brace.....	5.00
*306T	Rear leg, new style....	20.00
*309T	Front leg, new style....	28.00
763S	Bracket for top shifter.	3.50
767S	Shaft support .....	12.00
770S	Outboard bearing foot..	18.00
774S	Shifter bracket .....	3.00
778S	Outboard bearing brace.	1.75
789S	Outboard bearing .....	6.00
866	Top stringer, G size....	4.50
868	Bottom stringer, G size.	4.75
612	Top stringer, F size....	4.25
617	Bottom stringer, F size.	4.50
627	Bottom stringer rod, F size .....	2.20
867	Bottom stringer rod, G size .....	2.50
622	Rod for top stringer, F size .....	2.20
865	Rod for top stringer, G size .....	2.50
494S	Nut for stringer.....	.50

### Rear End Bearing Parts.

650S	Rear gudgeon .....	\$12.50
741S	Cap for bearing.....	1.50
847	Chain in automatic oiler .....	.50
738S	Cradle for leg bearing..	3.00
739S	Bearing box.....	3.50
781S	Cradle plate.....	2.00
849	Babbitt bushing.....	.75
*849½	Bronze bushing, interchangeable with 849...	1.75
C455	Saddle bolt.....	.35

### Front Main Bearing Parts.

649S	Front gudgeon.....	\$ 8.00
652S	Hub gudgeon.....	10.00
742S	Bearing cap.....	1.50
847	Chain in automatic oiler .....	.50
849	Babbitt bushing.....	.75
*849½	Bronze bushing, interchangeable with 849....	1.75

### Lower Front Leg Bearing.

637S	Sleeve clutch.....	\$ 6.00
575½	Upper half bushing, babbitt .....	1.50
575¾	Lower half bushing, babbitt .....	1.50
760S	Lower bearing cap.....	1.50

*795	Roller for sleeve clutch (takes 3), each.....	\$ 0.25
*575	Upper half bushing, bronze .....	2.50
*575¾	Lower half bushing, bronze .....	2.50

### Pulley Bearing.

783S	Box cap.....	\$ 1.25
576	Bushing, 1-7/16x4 inch, 1-15/16 in. bore, babbitt	1.25
*536S	Bushing, bronze, interchangeable with 576....	2.00
798S	Bushing for outboard bearing .....	1.50

### Intermediate Shaft Bearings.

574	Bushing, 2-3/16x3 inch, 1-11/16 in. bore, babbitt..	\$1.00
*535S	Bronze bushing, interchangeable with 574....	2.00

### Upper Shaft End Bearing.

573	Bushing, 2-7/16x3 inch, 1-15/16 in. bore, babbitt..	\$1.00
*534S	Bronze bushing, interchangeable with 573....	1.75

### Working Roll Bearings.

529S	Independent head casting .....	\$ 4.00
529½S	Independent head, wood part .....	1.00
56	Gland, right hand thread .....	1.25
57	Gland, left hand thread .....	1.25
479S-R	Stuffing box, R. H....	1.75
479S-L	Stuffing box, L. H....	1.75

### Shafts, Collars and Keys.

458S	Collar, 1¼x3½x1-15/16 bore, on upper shaft....	\$ 0.75
497S	Set collar on sleeve, lower shaft .....	1.00
585½	Gudgeon shaft .....	3.00
586	Intermediate shaft.....	3.00
*590	Key on rolls, ¼x5/16x2 in. ....	.25
592	Roll shaft, 1¼x17½ in. gear end.....	3.00
593	Roll shaft, 1¼x16½ in. rear end.....	3.00
595	Key in main shaft, ¾x ¾x5 in. ....	.50
596	Key in friction ring, ¾x ¾x2 in. ....	.25
597	Key in pinion 718S, 5/16 x5/16x2¾ in.....	.25
598	Key in gear 447S, 5/16x 5/16x2¼ in.....	.25
*600	Key in small sprocket, ¾x¾x1½ in.....	.25

## Victor Heavy Duty Churn Parts—Continued

812	Straight pin in gudgeon shaft .....	\$ 0.50	800S	Shift lever for pulley...	\$ 5.50
813	Taper pin in gudgeon shaft .....	.50	A273	Hand wheel .....	.85
846	Drive shaft with collar.	5.00	*569	Lock for shifting lever.	.50
*C409	Pins in roll shaft.....	.15	*570	Rod for shifting lever..	.25
			*571	Pin in thumb piece 653S	.50
			588	Pin for levers, 1x4 1/2 in..	.75
			*C440	Stud in lever 499S.....	.15

## Gears.

447S	14 in. gear on intermediate shaft .....	\$ 5.00
478S	8 1/2 in. gear on roll shaft	3.00
502S	3 1/2 in. pinion and clutch on lower shaft.....	2.50
514S	7 in. gear on gudgeon shaft .....	2.75
716S	5 in. pinion on gudgeon shaft .....	3.50
717S	13 in. gear on lower shaft .....	5.50
718S	4 1/2 in. pinion on intermediate shaft.....	3.00

## Chain Drive Parts.

773S	Small sprocket on drive shaft .....	\$ 6.00
132T	Large sprocket split hub	22.00
*513S	Chain idler pulley.....	1.50
*577	Stud for idler.....	.75
*759S	Arm for holding chain idler .....	.75
641 1/2	Drive chain. Market prices. See catalog list.	

## Friction Clutch Pulley Parts.

769S	Pulley 26 inch.....	\$26.00
837S	Friction ring.....	10.00
488S	Connecting link.....	.25
487S	Link block.....	.75
579	Pin, 1/2 x 2 in.....	.10
537S	Bronze bushing in pulley .....	3.00
489S	Adjusting screw.....	1.00
580	Pin, 1/2 x 2 1/2 in.....	.10
*581	Oil cup on pulley.....	1.00
490S	Friction dog.....	.50
481S	Friction cone.....	2.50
786S	Brake holder.....	1.00
787S	Bracket for brake, part on 774S .....	.75
785S	Bracket for brake, part on 767S .....	.75
843	Band on brake.....	2.00
844	Brake adjusting screw..	1.50
845	Dog on brake.....	.75
*C398	Nipple on pulley.....	.25

## Levers and Gear Shifter Parts.

499S	Lever for top shifter...	\$ 1.00
642S	Gear shift lever (changes speed) .....	5.50
*644S	Lock for gear shift lever .....	1.00
*653S	Thumb piece on 642S...	.25
715S	Top shifter fork.....	.75
763S	Top shifter bracket....	3.50
774S	Gear shifter bracket....	3.00
*775S	Lock for gear shift lever .....	1.50
*776S	Lug for 775S to leg....	\$ 0.50

## Door.

584	Wood part of door only..	\$ 1.00
963S	Bearing cleat, R. H....	1.25
964S	Bearing cleat, L. H....	1.25
125T	Door hinge, R. H.....	1.75
126T	Door hinge, L. H.....	1.75
54T	Door handle .....	.75

Price of door complete. \$ 7.75

When churn door is ordered, we always ship wood part with castings attached as per above list, unless expressly ordered otherwise.

## Door Frame Parts.

508S	Door frame casting....	\$12.50
5T	Adjustable cam.....	.75
*C56	Door cam spring, horizontal .....	.10
*C57	Door cam spring, vertical .....	.10
*C58	Adjusting plate for cam	.25
*C59	Fulcrum pin.....	.10

## Rolls and Drums.

785	Working roll for F size.	\$ 9.00
801	Working roll for G size.	10.00

Write for prices on drums and drum heads, stating size and style and part wanted.

## Miscellaneous.

None	of the following parts are shown on plate:	
516S	Drum lock, part on drum.	\$1.00
517S	Drum lock, part on stringer .....	.50
530S	Balance weight .....	1.50
561	Lock arm for drum....	.75
562	Holder for 517S.....	.15
661S	Vent gate handle.....	.25
662S	Vent gate slide.....	.25
663S	Vent gate body.....	.75
C408	Vent gate spring.....	.10
664S	Churn gate, 2 in., complete .....	3.00
665	Churn gate handle....	.30
465S	Slide for churn gate....	.60
C441	Stop stud on 2 in. gate..	.15
572	Washer for churn gate..	.10
639	Spring in churn gate....	.10
764S	Oil well cover.....	.15
793S	Hoop lug .....	1.00
B7	Glass holder.....	.50
53	Wrench for pack'g nuts	.50
642	Strainer for buttermilk.	1.00
891	Bolts for 767S.....	.25
892	Bolt for outboard bearing .....	.25
C60	Bolt from upright and front leg.....	.25
C61	Bolt from upright and rear leg.....	.25
C393	Pin, 1/2 x 4 in. on brake..	.25
C394	Pin, 1/2 x 2 1/2 in. on brake.	.15
C395	Pin, 1/2 x 2 in. on brake..	.15
C412	Galvanized hoop.....	2.50
C413	Gear extractor.....	2.00

# Victor Geared Churns

## Extra Parts

For Styles C, D, E, F and G.

No.	Name of Part	Price.	No.	Name of Part.	Price.
O	Clamp Washer .....	.25	A278	Key for Gear B1, 5/16x $\frac{1}{4}$ x $\frac{1}{2}$ in. ....	.25
E 1	Main Gudgeon .....	12.50	A279	Roller Gear Key, 5/16x $\frac{1}{4}$ x $\frac{1}{2}$ in. ....	.25
1 $\frac{1}{4}$	Main Gudgeon .....	15.00	A280	Roller Gear Key, 5/16x $\frac{1}{4}$ x $\frac{1}{2}$ in. ....	.25
B 1	4 in. Pinion .....	1.50	A281	Key for Pinion & B4, 5/16x $\frac{1}{4}$ x $\frac{1}{2}$ in. ....	.40
2	Front Leg .....	12.00	A282	Key for Gear, 5/16x $\frac{1}{4}$ x6 in. ....	.50
E 2	3 in. Pinion .....	1.00	539X	Front Gudgeon Box Stud....	.75
A 2 $\frac{1}{2}$	Box .....	1.25	540X	Roller Shaft .....	3.00
A 3	Lower Gear Shifter .....	1.00	541X	Gudgeon Shaft Lock Pin....	.25
A 4	Top Shaft Brkt Pulley End. ....	6.00	630X	Butter Milk Strainer.....	.75
B 4	10 in. Gear on Upper Shaft. ....	4.00	BB	Ring Gear .....	15.00
A 5	Bottom Shaft Frame.....	9.00	854X	Gear Lifter .....	1.75
A 6	Top Shaft Bracket Back End 6.00				
6 $\frac{1}{2}$	12 in. Gear .....	4.50			
7	Box Cap .....	1.00			
B 7	Sight Glass Casting .....	.50			
R 7	7 in. Roller Drive Gear....	2.75			
7 $\frac{1}{2}$	Box Cap .....	1.00			
A 8 $\frac{1}{4}$	Box Cap .....	1.25			
8 $\frac{1}{2}$	8 $\frac{1}{2}$ in. Gear for Roller.....	3.00			
10	Front Roller Support.....	5.00			
10 $\frac{1}{2}$	Front Roller Support.....	5.00			
11 $\frac{1}{2}$	Offset for Ring Gear.....	1.50			
A 13	Top Clutch Lever Lock.....	1.00			
A 13 $\frac{1}{2}$	Top Clutch Lever Lock.....	1.00			
14	Rear Leg .....	10.00			
A 14 $\frac{1}{4}$	Box .....	1.50			
A 15	Box Cap .....	1.00			
26	Cover Hinge, Flat.....	.50			
126	Cover Hinge, Round.....	.50			
D 30	Door Frame 2 ft. 6 in. long.10.00				
AD 30	Door Frame, 2 ft. long.....	9.00			
32	Door Fastener, Right.....	.40			
33	Door Fastener, Left.....	.40			
35	End Door Plate, Flat.....	.40			
135	End Door Plate, Round.....	.40			
131	End Door Plate.....	.50			
130	Cover Hinge .....	.50			
42	Hoop Lug .....	.75			
B 44	Friction Clutch Pulley Yoke. 1.00				
A 45	Rear Roller Bearing, Left. 1.25				
A 45R	Rear Roller Bearing, Right. 1.25				
48	Door Fastener .....	.40			
49	Door Fastener .....	.40			
53	Wrench .....	.50			
A 90	Lower Clutch Lever Bracket 1.25				
161	Combined Gear .....	4.75			
162	11 in. Gear for Roller.....	4.00			
172 $\frac{1}{4}$	Rear Gudgeon .....	10.50			
172 $\frac{1}{2}$	Rear Gudgeon .....	12.50			
251	Main Driving Shaft.....	4.00			
252	Intermediate Shaft .....	3.00			
255	Sight Glass .....	.25			
256R	Right Hand Stuff. Box Gland 1.25				
257L	Left Hand Stuff. Box Gland. 1.25				
258	Wrought Iron Hinge.....	.50			
A260	Frame Brace .....	.25			
A261	Stringer Support .....	.75			
A262	Stringer Support Socket....	.75			
A263	Stringer Support Cap.....	.25			
A264	Stud Bolt for Hoop Lug.....	.50			
A265	Hoop .....	2.00			
A267	Gudgeon Shaft .....	2.00			
A269	Shifting Lever for A3.....	.50			
A270	Shifting Lever for 6 $\frac{1}{2}$ Gear. .75				
A272	Lever Clutch Yoke.....	.50			
A273	Hand Wheel Nut.....	.35			
A275	Set Collar for Pulley.....	1.00			
A276	Screw for Hanger.....	.50			
A277	Key for Gear 162, 5/16x $\frac{1}{4}$ x $\frac{1}{2}$ 1 in. ....	.25			

## Left Hand Churns

Parts differing from right hand churns

70	Lower Gear Shifter.....	\$1.00
A13L	Top Clutch Lever Lock.....	1.00
2L	Front Leg .....	12.00
4AL	Top Shaft Bracket Pulley End 6.00	

## Stringers

No.	Name of Part.	Price.
653X	2 in. stringer 6 ft. 6 in. long	\$3.50
654X	2 in. stringer 7 ft. 2 in. long	3.75
655X	2 in. stringer 8 ft. 6 in. long	4.00
656X	2 in. stringer 9 ft. 2 in. long	4.50
A274	2 in. stringer 9 ft. 10 in. long	5.00

## Butter Rolls

No.	Name of Part.	Price.
666X	Butter Roll 4 ft. 11 in. long	\$5.00
667X	Butter Roll 5 ft. 7 in. long	6.00
668X	Butter Roll 6 ft. 11 in. long	7.00
669X	Butter Roll 7 ft. 7 in. long	8.00
253X	Butter Roll 8 ft. 3 in. long	9.00

## Pulleys

No.	Name of Part.	Price.
	6x30 Wood Pulley Complete	\$15.00
	8x30 Wood Pulley Complete	20.00
D2	2 Arm Flyer.....	3.00
D2 $\frac{1}{2}$	4 Arm Flyer.....	5.00
D 3	Shoe for Clutch Pulley.....	2.00
D 4	Sleeve for 2 Arm Pulley....	2.00
D 4 $\frac{1}{2}$	Sleeve for 4 Arm Pulley....	2.50
A268	Friction Ring .....	4.60
536X	Link for Fric. Clutch Pulley	.25
537X	Pin for Link.....	.10
542X	Grease Cup for Wood Pulley	.90
A271	Wood Pulley 6x30.....	8.00
676X	Wood Pulley 8x30.....	10.00

## Out Board Bearing for G Churns

No.	Name of Part.	Price.
SBD 1	Lower half bearing for Hngr	\$1.00
SBD 2	Upper half bearing for Hngr	1.00
A276	Screw for Hanger.....	.50
379X	Upper half of Hanger.....	6.00
380X	Lower half of Hanger.....	8.00
652X	Main Shaft .....	5.00
	Bolts for Bearing.....	.25

## Doors

No.	Name of Part.	Price.
647X	Door 15x30 $\frac{1}{2}$ in. for 2 ft. 6 in. frame .....	\$3.50
648X	Door 15 $\frac{1}{4}$ x20 $\frac{1}{2}$ in. for 2 ft. frame .....	2.50
649X	Door 15 $\frac{1}{4}$ x22 $\frac{1}{4}$ .....	2.50



# Special G Churns

## Extra Parts

No.	Name of Part.	Price.	No.	Name of Part.	Price.
G 1	10 inch gear.....	\$4.50	G 39	Lower lever .....	\$ 1.00
G 2	11 inch gear.....	5.00	G 40	Center shaft for gudgeon....	2.50
G 3	Double gear .....	5.50	G 41	Stud bolt for G 39.....	.50
G 4	12 inch gear.....	5.00	G B1	4 inch pinion .....	2.00
G 5	9 inch gear.....	4.50	BB	Ring gear .....	20.00
G 6	8 inch gear.....	3.25	B 7	Sight glass casting.....	.50
G 7	3½ inch pinion.....	1.50	G 1½	Main gudgeon .....	15.00
G 8	Stuffing box, left.....	2.00	G 17½	Rear gudgeon .....	12.50
G 8R	Stuffing box, right.....	2.00	48X	Cover cam .....	.50
G 9	Stuffing box gland, R. H.....	1.50	49X	Cover cam .....	.50
G 9½	Stuffing box gland, L. H.....	1.50	50X	Cover cam .....	.50
G 10	Independent head .....	7.50	130	Cover hinges .....	.50
G 11	Front leg frame.....	15.00	131	End cover plate.....	.75
G 12	Rear leg frame.....	12.50	255	Sight glass .....	.25
G 13	Lower shaft bracket.....	11.50	258	Wrought iron hinge.....	.75
G 14	Main shaft bracket.....	15.00	506X	Screw for main box.....	.25
G 15	Main bracket support.....	2.00	507X	Collar for gear stop.....	.25
G 16	Rear gudgeon box cap.....	1.25	508X	Lever for yoke.....	.75
G 17	Rear gudgeon box.....	1.50	509X	Stringer cap .....	.25
G 18	Box cap .....	1.25	510X	Key for arm ½x½x2 in.....	.25
G 19	Main gudgeon box.....	2.50	527X	Stringer .....	7.00
G 20	Main gudgeon box cap.....	1.75	528X	Butter roll .....	10.00
G 21	Box cap .....	1.25	529X	Key for G1 and G7 ¾x¾x6 in.....	.35
G 22	Box cap .....	1.25	530X	Key for G3 ½x½x7 in.....	.35
G 22½	Box cap .....	1.25	531X	Key for G2 ¾x¾x2¼ in.....	.35
G 23	Ring gear offset.....	1.75	532X	Key for G5 ¾x¾x1½ in.....	.35
G 24	Lower lever bracket.....	1.00	533X	Hoop .....	4.00
G 25	Cover frame .....	12.00	534X	Hoop lug stud.....	.75
G 26	Gear shifter .....	1.25	535X	Bolt for end gudgeon shaft.....	.25
G 27	Upper lever bracket.....	1.00	538X	Lock pin for gudgeon shaft.....	.25
G 28	Sector .....	1.00	544X	Iron for holding gear shifter.....	.25
G 29	Hoop lug .....	1.00	545X	Wrench .....	.50
G 30	Friction clutch yoke.....	1.50	546X	Cover holder, new style.....	4.00
G 32	Front gudgeon box stud.....	1.00	630X	Buttermilk strainer .....	2.00
G 33	Rear gudgeon box stud.....	1.00	646X	Churn cover .....	4.00
G 34	Adjusting screw for main box ..	.75	685X	Stringer support .....	5.00
G 35	Main shaft .....	6.00	689X	Leg for outboard bearing, new style .....	10.00
G 36	Intermediate shaft .....	5.00	854X	Gear lifter .....	1.75
G 37	Roller driving shaft.....	3.50			
G 38	Top lever .....	.75			

## Wood Friction Clutch Pulley Parts

	Pulley, complete .....	\$20.00	D 3	Friction pulley shoe.....	\$2.00
GA268	Friction ring .....	4.00	536X	Link for friction shoe.....	.25
GA271	Wood pulley with ring.....	10.00	537X	Pin for link.....	.10
GD2½	Friction flyer .....	5.00	542X	Grease cup for wood pulley..	.90
G 31	Sleeve .....	3.00			

## Iron Friction Clutch Pulley Parts

175X	Pulley only, with friction hub.....	\$21.00	180X	Cam bolt .....	\$ .15
176X	Ring .....	2.75	181X	Yoke .....	.75
177X	Arm .....	2.00	182X	Cone .....	1.50
178X	Friction tightening arm.....	.75	511X	Brass bushing .....	2.25
179X	Cam .....	.60	543X	Grease cup for iron pulley...	1.25

## Extras for Motor Stand

234X	Motor stand .....	\$6.00	252X	Leg .....	\$6.00
249X	Plate for resistance box.....	1.50	665X	Stringer for motor drive 2 in. x 11 ft. 9 in.....	8.00
250X	Leg for motor stand.....	1.00	679X	Shaft for motor drive.....	7.00
251X	Bracket for controller.....	4.00			

## Victor B and BB Churn—Repair List

No.	Parts	Price, each	No.	Parts	Price, each
548-X	R. H. packing nut.....	\$1.00	XXX	Ring gear.....	\$10.00
549-X	L. H. packing nut.....	1.00	Y-6	Cover hinge, part on cover	.50
550-X	Link for shoe in 565-X.....	.25	24	Friction sleeve.....	1.50
556-X	Set collar for pulley.....	.50	30	Friction shoe.....	1.25
557-X	Friction flyer.....	2.50	32	R. H. door cam on side.....	.50
558-X	Hoop lug.....	.50	33	L. H. door cam on side.....	.50
565-X	Friction ring.....	3.00	48	R. H. door cam on bottom.....	.50
625-X	Buttermilk strainer.....	.75	49	L. H. door cam on bottom.....	.50
853-X	Shifting lever, C. I. part.....	1.00	55	Cleat on cover.....	.50
189-S	Double gear.....	4.00	258	Cover hinge, part on drum	.75
190-S	8-inch gear.....	3.00	636	Cover.....	1.25
191-S	9-inch gear.....	3.50	877	Pins in cover hinge.....	.10
192-S	Top frame.....	5.00	878	Rolls for "B".....	5.00
193-S	Bottom frame.....	7.00	879	Rolls for "BB".....	6.00
194-S	Lower lever dog.....	.50	880	Roll shaft, short.....	2.00
195-S	Brkt. for top shift lever.....	1.00	881	Roll shaft, long.....	2.25
196-S	Brkt. for lower shift lever.....	1.00	884	Rods, upper to lower brkts.	.25
197-S	Box caps on gear frame.....	.50	C-216	Lever on upper gear brkt.	.50
198-S	Front leg.....	7.50	C-217	Lever on lower gear brkt.	.50
199-S	Rear leg.....	7.50	C-219	Stud for C-217.....	.50
200-S	Front gudgeon.....	3.00	C-414	Adj. screw for bearings.....	.50
201-S	7-inch gear.....	2.00	C-415	Upper shaft in gudgeon.....	1.50
208-S	Gear, 4 pitch.....	1.00	C-416	Main shaft.....	3.00
209-S	Gear, 3-pitch.....	1.00	C-417	Lower shaft.....	2.00
212-S	Offsets for ring gear.....	.75	C-418	Shaft in rear gudgeon.....	1.00
291-S	Pinion in ring gear.....	1.50	C-419	Pin in gudgeon shaft C-415	.20
A-273	Thumb wheel.....	.85	C-420	Key 1½ in. lg., upper shaft	.15
B	Gear on roll shaft.....	2.00	C-421	Key 2¾ in. lg., drive shaft	.20
O-8	Rear gudgeon.....	2.00	C-422	Key 1¾ in. lg., drive shaft	.15
O-9	Independent head casting.....	4.00	C-423	Key 1¾ in. lg., lower shaft	.15
O-9½	Independent hd., wood part	1.00	C-424	Key 5 in. lg., in lower shaft	.25
O-22	Box for front gudgeon.....	1.00	C-425	Pins in 565-X, ¾x1¾.....	.15
O-24	Box cap for front gudgeon.....	1.00	C-426	Pins in 565-X, 7-16x1½.....	.15
O-50	L. H. stuffing box.....	1.00	C-427	Pins in rolls.....	.15
O-50R	R. H. stuffing box.....	1.00	C-428	Pully shift lever, W. I. part	.75
O-54	Door frame.....	7.00	C-429	Wood piece in friction shoe	.50
O-26	Box for rear gudgeon.....	1.00	C-430	Wood pulley.....	5.00
O-27	Box cap for rear gudgeon.....	1.00	C-431	Long hoop.....	1.25
XX.	Half washer on stringer.....	.20	C-432	Short hoop.....	1.00
			C-451	Bolts for hoop lugs.....	.25

## Victor Jr., Churn—Repair List

210-S	6-inch gear.....	\$2.00	888-S	Pulley for No. 2.....	\$10.00
211-S	11-inch gear.....	3.00	299-T	Collar on drive shaft.....	.50
213-S	4-inch clutch gear.....	2.50	O-50R	R. H. stuffing box.....	.75
214-S	3-inch gear.....	2.00	O-50L	L. H. stuffing box.....	.75
216-S	Gear frame.....	7.50	R	R. H. packing nut.....	.75
217-S	Box cap for gear frame— upper.....	.75	L	L. H. packing nut.....	.75
218-S	Box cap for gear frame— lower.....	.75	C-1	Independent head casting.....	3.75
219-S	Front leg.....	7.00	C-7½	Independ't head, wood part	.75
220-S	Rear leg.....	7.00	A-273	Thumb wheel.....	.85
221-S	Upper gear shifter.....	1.00	A-1	L. H. cam for door.....	.50
222-S	Lower gear shifter.....	.75	A-X	R. H. cam for door.....	.50
223-S	Conn. link on shift lever.....	.25	000	Door frame for No. 1.....	8.00
225-S	Front gudgeon and gear.....	6.50	0000	Door frame for No. 2.....	8.00
226-S	Front box.....	1.50	12	Gears on roll shaft.....	2.00
227-S	Box cap for same.....	1.50	814	Shaft in rear gudgeon.....	1.50
228-S	Rear box.....	1.00	815	Main drive shaft.....	2.00
229-S	Box cap for same.....	1.00	816	Lower shaft.....	1.25
230-S	Rear gudgeon.....	1.25	817	Pin ¾x2¾-in. long in 236-S	.35
231-S	Center brace for No. 1.....	5.50	818	Pin ¾x1¾-in. long in 236-S	.25
232-S	Center brace for No. 2.....	6.50	819	Pin ¾x1¾-in. long in 236-S	.25
234-S	Pulley for No. 1.....	8.00	820	Butter rolls for No. 1.....	1.50
236-S	Friction ring.....	7.00	821	Butter rolls for No. 2.....	2.00
252-S	Shifting lever for pulley.....	1.75	822	Roll shaft—short for No. 2	1.00
253-S	Adjusting screw for 236-S.....	1.25	822½	Roll shaft—long for No. 2	1.00
254-S	Friction dog.....	.50	823	Roll shaft for No. 1.....	1.50
255-S	Outer links in fric. ring.....	.25	826	Hoop.....	1.00
256-S	Center link in friction ring.....	.75	C-19	Key in main shaft 5-16x ¾-in., 3½-in. long.....	.50
257-S	Friction cone.....	1.00	C-20	Key in lower shaft 1¾-in. long, ¾x¾-inch.....	.25
258-S	Ring gear hub.....	2.00	C-20½	Key in lower shaft 1¾-in. long, ¾x¾-in.....	.25
271-S	Shifting lever for gears.....	.75	C-414	Adj. screw for main bear'gs	.50
281-X	Cleats on cover.....	.75	C-427	Pins in rolls.....	.15
303-S	Hoop lugs.....	.75			

# Price List of Repairs for Dual Churns

## Sizes 3, 4, 5, 6, 7

600	Gear shield .....	\$12.50	659	Drive pulley for sizes 5, 6 and 7, 6½x20.....	\$12.00
601	Internal ring gear.....	20.00	C61	Stuffing box.....	.75
602	Rear end spider.....	12.00	C62	Stop on barrel.....	.40
603	Front end spider.....	15.00	V63	Stop on girt.....	.50
604	Sectional head, complete.....	12.50	T64	Hinge on door, malleable..	1.00
605	Bracket for guide bar, galvanized .....	1.50	T65	Hinge on barrel, malleable..	1.00
606	Cross-head for front end....	9.00	U	Bracket under elevator board, galvanized.....	1.00
607	Cross-head for rear end....	3.00	Y	Yoke, malleable .....	.50
608	Large stuffing box, front end	4.00	67	Cylinder for churn gate....	1.00
609	Large gland, front end.....	3.50	68	Plate for churn gate.....	.50
610	Single roller gear.....	4.50	70	Lever for churn gate.....	.50
611	Double roller gear.....	6.00		Stem for churn gate.....	.50
612	Small roller gear.....	2.00		Leather for churn gate....	.25
613	Door frame for sizes 6 and 7, galvanized .....	12.50		Churn gate, complete.....	2.00
V14	Door button .....	.80		Pulley shaft collar and set screw .....	.70
614	Glass ring .....	.40		Shaft for rear end cross-head, 1½x14.....	3.00
615	Glass ring .....	.40		Drive shaft, 1½x33.....	4.00
15	Cleat for door.....	.50		Roller drive shaft, 1½x24½	3.00
616	Front leg.....	15.00		Counter shaft, 1½x13½.....	2.00
617	Rear leg .....	12.00		Roller shaft, 1x21.....	2.00
618	Outward bearing .....	2.00		Roller shaft, 1x11½.....	1.00
621	Shoe for friction block....	1.50		Key for rear end cross-head shaft, ¾x½x2.....	.25
622	Friction arm.....	3.50		Key for roller drive shaft, ¾x5-16x1½	.25
623	Yoke collar for friction....	3.50		Key for drive shaft, ¾x5-16x2½	.25
624	Lock lever.....	2.50		Key for countershaft, ¾x5-16x2½	.25
625	Lock wheel.....	4.00		Key for countershaft, ¾x5-16x2	.25
626	Upper sprocket, front end..	3.00		Key (half moon) for roller shaft, ¼x2.....	.25
627	Upper sprocket, rear end..	1.50		Key for gas-pipe shaft, 5-16x¾x2½	.25
628	Sprocket on girt.....	2.00		Key for front end cross-head, ½x¾x5.....	.50
629	Bracket on girt.....	1.50		Feather key for drive shaft, ¾x½x4½	.50
630	Clutch gear.....	6.00		Feather key for front end cross-head shaft, ¾x¾x3¾	.50
631	Reducing gear.....	5.00		Steel shift lever.....	1.00
V32	Drive pinion.....	3.50		Frame brace.....	.50
632	Reducing pinion.....	3.00		Hoops, each.....	1.50
633	Gear for roller drive.....	7.50		Friction link.....	.30
634	Lever for rollers.....	1.50		Sprocket chain (50 links)...	1.50
635	Door frame for sizes 3, 4 and 5, galvanized.....	10.00		Sprocket chain links, each..	.05
636	Small gland.....	2.00		Wood block for friction....	.30
637	Upper bearing cap on front leg .....	3.00		Wood stop stick.....	.60
639	Upper bearing cap on rear leg .....	1.50		Wood cross-head.....	2.50
641	Cross-head for rear end....	4.00		Wood door, for sizes 3, 4 and 5, 14½x22¾.....	1.00
642	Clutch sleeve pinion.....	8.00		Wood door, for sizes 6 and 7, 14½x26¾.....	1.00
43	Hoop clamp .....	1.00		Wood support for guide bar ½-in. cork packing, per foot	1.50
644	Lever bracket.....	1.00		Packing (½-in.) for sectional head .....	.05
645	Bracket for rear guide bar, galvanized .....	2.00		Packing (½-in.) for roller shaft .....	1.00
646	Bracket for rear guide bar, galvanized .....	2.00			.50
	Rear guide bar for size 5.....	1.80			
	Rear guide bar for size 6.....	2.00			
	Rear guide bar for size 7.....	2.20			
649	Catch for lock lever.....	1.00			
650	Starting lever .....	3.00			
651	Upper bearing cap on bridge tree .....	1.50			
652	Upper bearing cap on bridge tree .....	2.00			
653	Bridge tree .....	15.00			
654	Upper bearing cap on bridge tree .....	2.00			
655	Lever bracket .....	1.00			
658	Drive pulley for sizes 3 and 4, 5½x20.....	10.00			

Description.	Size.				
	3	4	5	6	7
Butter Roller.....	\$5.00	\$6.00	\$7.00	\$8.00	\$9.00
Lifting Shelf.....	1.60	1.70	1.80	1.90	2.00
Guide Bar.....	1.20	1.30	1.40	1.50	1.60
Girt .....	3.00	3.50	4.00	4.50	5.00
Gas-Pipe Shaft, Galvanized.....	1.50	1.75	2.00	2.25	2.50

# Price List of Repairs for Dual Churns

## Heavy Duty Type

700	Gear shield.....	\$18.75	U	Bracket under elevator board, galvanized.....	\$1.00
701	Internal ring gear.....	30.00	67	Cylinder for churn gate.....	1.00
702	Rear end spider.....	18.00	68	Plate for churn gate.....	.50
703	Front end spider.....	22.50	70	Lever for churn gate.....	.50
704	Sectional head, complete.....	18.75		Stem for churn gate.....	.50
605	Bracket for guide bar, galvanized.....	1.50		Leather for churn gate.....	.25
706	Cross-head for front end.....	13.50		Churn gate, complete.....	2.00
707	Cross-head for rear end.....	4.50		Pulley shaft collar and set screw.....	.70
708	Large stuffing box for front end.....	6.00		Shaft for rear end cross-head, 1 3/4 x 14.....	3.00
709	Large gland for front end.....	5.25		Drive shaft, 1 3/4 x 40.....	5.00
710	Single roller gear.....	6.75		Roller drive shaft, 1 1/2 x 25 1/2.....	4.00
711	Double roller gear.....	9.00		Counter shaft, 1 1/2 x 16 1/2.....	3.00
712	Small roller gear.....	3.00		Roller shaft, 1 x 21.....	2.00
713	Door frame, galvanized.....	18.75		Roller shaft, 1 x 11 1/2.....	1.00
V14	Door button.....	.80		Key for rear end cross-head shaft, 3/8 x 1/2 x 2.....	.25
15	Cleat for door.....	.50		Key for roller drive shaft, 3/8 x 5-16 x 1 1/4.....	.25
615	Glass ring.....	.40		Key for drive shaft, 1/2 x 1/2 x 3 3/4.....	.25
716	Front leg.....	22.50		Feather key for drive shaft, 1/2 x 1/2 x 5 1/2.....	.50
717	Rear leg.....	18.00		Key for countershaft, 3/8 x 5-16 x 2 1/2.....	.25
621	Shoe for friction block.....	1.50		Key for countershaft, 3/8 x 5-16 x 2.....	.25
722	Friction arm.....	5.25		Key (half moon) for roller shaft, 1/4 x 2.....	.25
723	Yoke collar for friction.....	5.25		Key for gas-pipe shaft, 5-16 x 3/8 x 2 1/2.....	.25
724	Lock lever.....	3.75		Key for front end cross-head, 1/2 x 5/8 x 5.....	.25
725	Lock wheel.....	6.00		Feather key for front end cross-head shaft, 3/8 x 3/8 x 3 1/4.....	.50
726	Upper sprocket, front end.....	4.50		Hoops, each.....	2.00
727	Upper sprocket, rear end.....	2.25		Friction link.....	.30
728	Sprocket on girt.....	3.00		Sprocket chain (54 links).....	.08
730	Clutch gear.....	9.00		Sprocket chain links, each.....	.30
731	Reducing gear.....	7.50		Wood block for friction.....	.60
732	Drive pinion.....	5.25		Wood stop stick.....	2.50
733	Gear for roller drive.....	11.25		Wood cross-head.....	1.50
734	Lever for rollers.....	2.25		Wood support for guide bar.....	1.00
636	Small gland.....	2.00		Wood door, 14 1/2 x 26 1/4.....	.05
737	Upper bearing cap on front leg.....	4.50		1/2-in. cork packing, per foot.....	1.00
739	Upper bearing cap on rear leg.....	2.25		Packing (1/2-in.) for sectional head.....	.50
742	Clutch sleeve pinion.....	12.00		Packing (1/4-in.) for roller shaft.....	.50
V43	Hoop clamp.....	1.50		Butter roller for size 6, heavy duty.....	8.00
743	Reducing pinion.....	4.50		Butter roller, for size 7, heavy duty.....	9.00
645	Bracket for rear guide bar, galvanized.....	2.00		Lifting shelf, for size 6, heavy duty.....	1.90
745	Bracket on leg.....	2.50		Lifting shelf, for size 7, heavy duty.....	2.00
646	Bracket for rear guide bar, galvanized.....	2.00		Guide bar, for size 6, heavy duty.....	1.50
746	Bracket on leg.....	2.50		Guide bar, for size 7, heavy duty.....	1.60
747	Bracket on girt.....	2.50		Rear guide bar, for size 6, heavy duty.....	2.00
749	Catch for lock lever.....	1.50		Rear guide bar, for size 7, heavy duty.....	2.20
750	Starting lever.....	4.50		Girt, for size 6, heavy duty.....	6.00
751	Upper bearing cap on bridge tree.....	2.25		Girt, for size 7, heavy duty.....	7.00
752	Upper bearing cap on bridge tree.....	3.00		Gas-pipe shaft, galvanized, for size 6, heavy duty.....	3.00
753	Bridge tree.....	22.50		Gas-pipe shaft, galvanized, for size 7, heavy duty.....	3.50
754	Upper bearing cap on bridge tree.....	3.00			
755	Lever bracket.....	1.50			
756	Lever for reducing gear.....	4.00			
757	Latch for reducing gear lever.....	1.00			
758	Bracket for lever.....	1.50			
759	Pulley.....	18.00			
760	Back box for outboard bearing leg.....	3.00			
C61	Stuffing box.....	.75			
761	Front box for outboard bearing leg.....	3.00			
762	Outboard bearing leg.....	15.00			
763	Stop on girt.....	.50			
T64	Hinge on door, malleable.....	1.00			
764	Stop on barrel.....	.40			
T65	Hinge on barrel, malleable.....	1.00			

# Price List of Repairs for Disbrow Churns

Size B2					
No.	Name	Price	No.	Name	Price
14	Door button .....	.50	84	Pulley, 3x12.....	2.80
B30	Double shifting gear.....	1.50	85	Collar on 1-inch shaft....	.50
B31	Clutch gear on main shaft	1.00	87	Shift lever .....	.90
44	Hand wheel screw, inch		88	Shift lever .....	1.75
	hole .....	1.50	90	Gear shaft box.....	1.00
60	Leg on gear end .....	5.00	B90	Gear shaft box frame....	2.00
62	Long box .....	3.00	92	Friction arm .....	2.00
B62	Long box .....	4.00	93	Pulley, 3x10, and gear...	5.00
63	Lever to start rollers....	1.00	94	Strap under pulley hub..	.25
B64	Gear spider .....	3.50		Door hinge .....	.50
65	Hoop clamp .....	.75		Steel starting lever.....	.80
67	Balance weight .....	.75		Hoops, each .....	.80
68	Long box cap .....	1.00		Drive shaft, 1x15½.....	1.50
B68	Long box cap.....	1.50		Drive shaft, 1x13.....	1.50
69	Lower short box .....	.75		Cross-head shaft, 1¼x7¼	1.75
70	Upper short box.....	.75		Cross-head shaft, 1¼x10½	1.80
71	Cross-head, gear end....	3.00		Roller shaft, ¾x7.....	1.00
72	Roller gear.....	1.50		Roller shaft, ¾x12.....	1.25
73	Hand wheel nut.....	.75		Butter Roller .....	5.00
74	Ring spider .....	4.00		Roller shelf .....	.90
B74	Ring spider .....	4.00		F'light .....	1.25
75	Door frame .....	6.00		Girt .....	2.20
76	Loose head, complete....	2.50		Wood cross-head .....	1.60
77	Packing ring.....	2.00		Roller shelf support....	1.20
78	Glass ring .....	.25		Wood door.....	.80
79	Internal gear .....	3.00		Wood stop stick.....	.50
80	Support for long box....	.75		Lock pin.....	.30
B80	Support for long box....	1.00		Leather washer.....	.20
82	Leg on off end.....	3.50		Wood for friction arm...	.20
83	Drive pinion .....	1.00		Steel brace, 7-16x20....	.40

## Sizes A2 and A3

H1	Large driving gear.....	5.00	A21	Friction arm with pinion	3.00
102	Large ring spider.....	6.00	123	Long lock lever.....	3.25
A102	Large ring spider.....	7.50	A23	Long lock lever.....	3.25
3	Gear spider .....	7.50	124	Bracket for lever.....	.75
104	Loose head, complete....	4.50	A24	Bracket for lever.....	.75
106	Cross-head, gear end....	3.50	125	Clamp hand wheel.....	1.00
107	Cross-head, off end.....	3.00	126	Catch lever.....	.75
108	Packing ring .....	3.00	27	Support for shift rod....	.25
110	Single roller gear .....	2.00	129	Pulley, 4x13½.....	5.50
111	Small intermediate gear..	2.00	130	Clutch pinion .....	2.50
112	Large intermediate gear..	2.50	A30	Clutch pinion .....	2.50
113	Door frame .....	7.50	131	Double pinion.....	2.50
14	Door button .....	.50	132	Drive pinion .....	2.00
R14	Door button .....	.50	W33	Plate under slide.....	.25
L14	Door button .....	.50	136	Box bottom, gear end....	1.00
115	Door cleat .....	.40	137	Box cap, gear end.....	1.50
116	Leg on gear end.....	6.00	A37	Box cap, gear end.....	1.50
A16	Leg on gear end.....	6.00	138	Box bottom, off end....	1.75
117	Leg on off end.....	4.50	139	Box cap, off end.....	1.00
A117	Leg on off end.....	4.50	140	Lever to start rollers...	1.50
118	Outside leg, gear end....	3.50	152	Box cap for pulley shaft.	1.00
119	Box on outside leg.....	1.25	153	Bridge tree.....	1.50
T19	Box on outside leg.....	1.25	M54	Reducing gear lever....	1.75
120	Box on pulley shaft.....	1.25	LT54	Reducing gear lever latch	.25
121	Friction arm with pinion	3.00	T55	Starting lever .....	1.50

# Price List of Repairs for Disbrow Churns

## Sizes A2 and A3—Continued

No.	Name	Price	No.	Name	Price
T56	Slide to move pulley.....	.50		Pulley shaft, 1¼x27.....	2.00
157	Slide to move reducing gear .....	.50		Cross-head shaft, 1½x12½	1.80
158	Clutch for fork lever.....	3.00		Cross-head shaft, 1¼x14½	2.25
LT58	Malleable fork for lever.....	.80		Short shaft, 1x7½.....	.75
W58	Malleable fork for lever..	1.00		Roller shaft, 1x10.....	1.20
161	Stuffing box .....	.70		Roller shaft, 1x18.....	1.40
162	Stop on barrel.....	.40		Butter roller for size A2.	4.00
163	Stop on girt.....	.40		Butter roller for size A3.	5.00
T64	Malleable hinge on door.	1.00		Roller shelf for size A2..	1.00
A64	Malleable hinge on door.	1.00		Roller shelf for size A3..	1.10
T65	Malleable hinge on barrel	1.00		Flight for size A2.....	1.40
164	Ball lever .....	2.00		Flight for size A3.....	1.50
	Steel fork lever .....	1.00		Girt for size A2.....	2.40
	Pulley shaft collar .....	.75		Girt for size A3.....	2.60
	Hoops, each .....	1.25		Wood cross-head.....	2.00
	Steel clamp pin.....	.40		Roller shelf support.....	1.40
	Shift rod for A2, with adjustment .....	1.00		Wood door .....	.90
	Shift rod for A3, with adjustment .....	1.10		Wood for friction arm...	.25
				Wood stop stick.....	.50
				½-in. cork packing, per ft.	.05

## Sizes 3, 4, 5, 6 and 7

H1	Large driving gear.....	5.00	R14	Door button .....	.50
T1	Large driving gear.....	10.00	L14	Door button .....	.50
V1	Internal ring gear.....	20.00	XR14	Door button .....	.50
C1	Spider gear.....	8.00	XL14	Door button .....	.50
2	Ring spider .....	6.50	15	Cleat for door .....	.50
T2	Ring spider .....	7.25	16	Leg on gear end .....	4.50
R2	Ring spider .....	9.00	H16	Leg on gear end.....	4.50
W2	Ring spider .....	9.00	T16	Leg on gear end.....	6.50
3	Gear spider .....	6.00	216	Leg on gear end .....	6.50
T3	Gear spider .....	10.00	316	Leg on gear end .....	10.00
W3	Gear spider .....	10.00	17	Leg on off end.....	3.75
4	Loose head, gear end....	3.00	T17	Leg on off end.....	4.75
M4	Loose head, gear end, complete .....	5.50	217	Leg on off end.....	4.75
5	Loose head, off end.....	4.00	317	Leg on off end.....	8.00
6	Cross-head, gear end....	2.75	18	Leg outside of pulley....	1.75
H6	Cross-head, gear end....	2.75	T18	Leg outside of pulley....	4.00
T6	Cross-head, gear end....	4.50	19	Box on outside leg.....	1.00
W6	Cross-head, gear end....	4.50	T19	Box on outside leg.....	1.25
7	Cross-head, off end.....	2.75	20	Bridge tree.....	3.00
H7	Cross-head, off end.....	2.75	H20	Bridge tree .....	3.00
8	Packing ring .....	3.00	220	Box on pulley shaft.....	1.00
10	Single roller gear .....	1.75	320	Box on pulley shaft.....	1.00
T10	Single roller gear .....	2.25	420	Box on pulley shaft.....	1.00
11	Double roller gear .....	2.50	520	Box on pulley shaft.....	1.50
T11	Small intermediate gear	2.50	21	Friction arm with pinion.	2.50
12	Small intermediate gear.	1.25	T21	Friction arm with pinion.	2.50
T12	Large intermediate gear.	3.00	C21	Friction arm with pinion.	3.00
13	Door frame .....	3.00	H21	Friction arm with pinion.	3.00
T13	Door frame.....	3.00	22	Friction arm with pinion.	2.25
C13	Door frame .....	8.50	C22	Friction arm with pinion.	3.50
X13	Door frame .....	9.50	H22	Friction arm with pinion.	3.50
14	Door button.....	.50	23	Long lock lever .....	2.75
X14	Door button .....	.50	223	Long lock lever.....	3.50
			323	Long Lock Lever.....	3.50

# Price List of Repairs for Disbrow Churns

Sizes 3, 4, 5, 6 and 7—Continued

No.	Name	Price	No.	Name	Price
24	Bracket for lever .....	.75	H53	Bridge tree .....	2.00
224	Bracket for lever .....	.75	W53	Bridge tree .....	2.00
A24	Bracket for lever .....	.75	T54	Reducing gear lever .....	1.75
25	Clamp hand wheel .....	1.00	M54	Reducing gear lever .....	1.75
26	Catch lever .....	.75	W54	Reducing gear lever .....	2.00
27	Support for shift rod ...	.25	LT54	Reducing gear lever latch	.25
29	Pulley, 5x19 .....	5.50	T55	Starting lever .....	1.50
T29	Pulley, 5x19 .....	7.50	C55	Starting lever .....	1.50
30	Clutch pinion .....	1.50	T56	Slide to move pulley .....	.50
H30	Clutch pinion .....	1.50	T56	Slide to move pulley .....	.50
T30	Clutch pinion .....	2.50	LT56	Slide to move pulley .....	.50
W30	Clutch pinion .....	3.00	T57	Slide to move reducing gear .....	.50
31	Double pinion .....	2.00	T58	Clutch for fork lever .....	2.75
T31	Double pinion .....	3.00	H58	Clutch for fork lever .....	3.00
H31	Double pinion .....	3.00	LT58	Fork for lever (malleable)	.80
W31	Double pinion .....	3.50	W58	Fork for lever (malleable)	1.00
32	Drive pinion .....	1.25	T59	Pulley, 6x22 .....	8.50
T32	Drive pinion .....	3.00	T61	Stuffing box .....	.75
V32	Drive pinion .....	3.50	C61	Stuffing box .....	.75
33	Cap to hold No. 56 .....	.75	T62	Stop on barrel .....	.40
34	Dog and ring .....	1.50	C62	Stop on barrel .....	.40
35	Holder for hand wheel ...	.75	T63	Stop on girt .....	.40
36	Box bottom, gear end .....	.75	C63	Stop on girt .....	.40
T36	Box bottom, gear end .....	1.00	T64	Malleable hinge on door ..	1.00
H36	Box bottom, off end .....	1.00	T65	Malleable hinge on barrel	1.00
37	Box cap, gear end .....	.75	W99	Bracket .....	.50
T37	Box cap, gear end .....	1.25	164	Ball lever .....	2.00
237	Box cap, gear end .....	2.00	0	Washer for cross-head stud .....	.10
38	Box bottom, off end .....	.75	S	Rod adjuster .....	.50
T38	Box bottom, off end .....	2.50	U	Galvanized bracket .....	1.00
39	Box cap, off end .....	.75	Y	Yoke .....	.50
H39	Box cap, off end .....	.75	67	Cylinder for churn gate ..	1.00
T39	Box cap, off end .....	1.00	68	Plate for churn gate .....	.50
40	Lever to start rollers .....	1.50	70	Lever for churn gate .....	.50
240	Lever to start rollers .....	1.50		Stem for churn gate .....	.50
L40	Lever to start rollers .....	1.50		Leather for churn gate .....	.25
41	Glass ring .....	.25		Churn gate complete .....	2.00
42	Clutch hub .....	.60		Pulley shaft, 1½x30 .....	2.00
43	Hoop clamp .....	1.00		Pulley shaft, 1½x30¼ .....	2.00
44	Hand wheel screw, inch-hole .....	1.00		Pulley shaft, 1½x29 .....	2.00
44	Hand wheel screw, 1¼-inch hole .....	1.25		Pulley shaft, 1½x29¼ .....	2.00
H44	Hand wheel screw .....	1.50		Pulley shaft, 1¼x27 .....	2.00
46	Latch for hand wheel .....	.25		Cross-head shaft, 2¼x15 .....	3.00
47	Shifter for hand wheel ...	2.25		Cross-head shaft, 2¼x15½ .....	3.00
48	Shifter screw top .....	1.00		Cross-head shaft, 1¼x11½ .....	2.50
49	Shifter screw bottom .....	1.00		Cross-head shaft, 1¼x15 .....	2.50
50	Nut for H44 .....	1.00		Cross-head shaft, 1¼x15½ .....	2.50
51	Malleable clamp .....	.75		Cross-head shaft, 1¼x15½ .....	2.50
52	Cap box for H20 .....	.75		Cross-head shaft, 1½x12½ .....	1.80
T52	Cap box for pulley shaft ..	.75		Cross-head shaft, 1¼x14½ .....	2.50
252	Cap box for pulley shaft ..	.75		Short shaft, 1x5¼ .....	.50
352	Cap box for pulley shaft ..	1.00		Short shaft, 1¼x9 .....	1.00
552	Cap box for pulley shaft ..	1.50		Short shaft, 1¼x8¾ .....	1.00
T53	Bridge tree .....	1.50		Short shaft, 1x5½ .....	.75
C53	Bridge tree .....	2.00		Roller shaft, 1x10 .....	.75

**Sizes 3, 4, 5, 6 and 7—Continued**Digitized by Google



## Mason Power Butter Worker Extras

Galvanized. Plain.

1. Large gear wheel, held to journal frame with No. 8.....	\$1.80	\$1.50
2. Center gear wheel, runs the pulley shaft No. 1.....	1.35	1.15
3. Lower gear wheel, fastened to shaft No. 5.....	1.35	1.15
4. Pinion on short shaft, turns the table, connects with No. 18...	1.35	1.15
5. Short shaft, fastened to Nos. 3 and 4.....	1.35	1.15
6. Gear wheel for right hand roller, stand behind the pulleys....	1.35	1.15
7. Gear wheel for left hand roller, stand behind the pulleys....	1.35	1.15
8. Wrist pin, No. 1 gear wheels turn on.....	1.35	1.15
9. Left hand ear, holds No. 7 in place.....	.55	.40
10. Right hand ear, holds No. 6 in place.....	.55	.40
11. Pulley shaft, the pulleys and No. 2 on this shaft.....	1.15	1.15
12. Roller shaft, both shafts alike, for corrugated rolls, each....	1.15	1.15
13. Head block, holds the end of rolls, center of table.....	1.90	1.90
14. Center pin, holds No. 13.....	.75	.75
15. Single chair for the travelers, No. 17, each.....	.55	.40
16. Double chair for the travelers, No. 17.....	.90	.75
17. Travelers, run in Nos. 15 and 16, each.....	.20	.15
18. Track, about 30 pounds, per pound.....	.20	.15
19. Thimble, goes on the center pin, No. 14.....	.30	.25
20. Journal frame, the large casting, bolted to the frame.....	5.25	4.50
21. Elbow, holds No. 11 in place.....	2.25	1.90
Corrugated wood rolls, each.....	3.40	3.40
Tables with plain castings, each.....	....	18.00
Tables with galvanized castings, each.....	....	20.00
Tables with galvanized castings and raised sides, each.....	....	27.00
Pulleys .....	3.00	2.00

Order by Number.

## Ideal Bottle Filler Extras

2-row Tank.....	each, \$4.00
4-row Tank.....	each, 5.50
Complete attachment for 2-row.....	set, 2.50
Complete attachment for 4-row.....	set, 4.50
Rubber Casings.....	each, .05
Hand Levers.....	each, .30
Springs .....	each, .25
Thumb Screws.....	each, .15
Casters .....	each, .20
"S" Connecting Links.....	each, .10
Cross Levers.....	each, .30
Cross Lever Nuts.....	each, .20

## Coils Complete with Shaft for 20th Century Heaters, Farrington Milk and Cream Pasteurizers

Complete list of extras for any of these machines will be furnished on application.

### 20th Century Heater Coils with Shafts

No. 1 Copper.....	\$54.00
No. 2 Copper.....	70.00
No. 3 Copper.....	87.00
No. 4 Copper.....	104.00

In ordering coils, give serial number of Heater, also serial number of old coil (on shaft).

### Farrington "Special" Pasteurizer Coils

1,000-pound capacity copper coil, 6 discs.....	\$80.00
2,000-pound capacity copper coil, 10 discs.....	150.00
3,000-pound capacity copper coil, 15 discs.....	200.00
4,000-pound capacity copper coil, 20 discs.....	260.00
5,000-pound capacity copper coil, 24 discs.....	325.00

In ordering coils, give serial number of pasteurizer; also serial number of old coil (on shaft).

### Farrington Junior Pasteurizer Coils Complete with Shaft

1000-pound Capacity Copper Coil, 5 Discs.....	\$ 75.00
1500 " " " " 7 " .....	90.00
2000 " " " " 8 " .....	105.00
2500 " " " " 10 " .....	135.00

In ordering coils give serial number of Pasteurizer, also serial number of old coil (on shaft).

### Farrington Duplex Cream Pasteurizers—Straight Pattern

#### Style "A" Machine

Heating Coil, Copper, 4 Discs.....	\$60.00
Cooling Coil, Copper, 6 discs.....	70.00

In ordering coils, give serial number of Pasteurizer, also serial number of old coil (on shaft).

**Style "B" Machine**

Heating Coil, Copper, 5 Discs.....	\$67.00
Cooling Coil, Copper, 8 Discs.....	87.00

**Style "C" Machine**

Heating Coil, Copper, 7 Discs.....	\$80.00
Cooling Coil, Copper, 9 Discs.....	98.00

In ordering coils give serial number of Pasteurizer, also serial number of old coil (on shaft).

### Coils Complete with Shaft for Two Compartment, Step Pattern, Pasteurizer

**Style "D" Machine**

Heating Coil, Copper, 8 Discs.....	\$125.00
Cooling Coil, Copper, 10 Discs.....	140.00

**Style "E" Machine**

Heating Coil, Copper, 10 Discs.....	\$150.00
Cooling Coil, Copper, 12 Discs.....	165.00

**Style "F" Machine**

Heating Coil, Copper, 15 Discs.....	\$200.00
Cooling Coil, Copper, 17 Discs.....	220.00

In ordering coils give serial number of Pasteurizer, also serial number of old coil (on shaft).

### Coils Complete with Shaft for Three Compartment Pasteurizer

No. of Machine:	0		1		2		3		4	
	List Price.	No. Discs.	List Price.	No. Discs.	List Price.	No. Discs.	List Price.	No. Discs.	List Price.	No. Discs.
Heater Discs, Complete ...	\$80.00	5	\$110.00	7	\$150.00	10	\$200.00	15	\$260.00	20
Center Cooler Coil .....	70.00	5	100.00	7	140.00	10	190.00	15	250.00	20
End Cooler Coil.	70.00	5	100.00	7	140.00	10	190.00	15	250.00	20

In ordering coils give serial number of Pasteurizer, also serial number of old coil (on shaft).

# Challenge Butter Printer—Repair Parts

For Rack and Pinion (Former) Style Machine

No.	Description.	Price, Each.
386-S	Leg .....	\$0.85
376-S	Base .....	5.00
703-S	Wire Frame for Box .....	5.00
704-S	Wire Frame for Tub .....	5.00
382-S	Bracket for Rack .....	3.75
383-S	Set Collar .....	.15
388-S	Ratchet Wheel .....	1.00
389-S	Dog, on Lever .....	.50
387-S	Castings for Wood Handle .....	1.75
434-S	Pinion .....	.50
550	Channel Iron for Bow .....	.75
390-S	Dog, on Base .....	.75
549	Wood Handle .....	.25
500	Main Shaft .....	.50
501	Iron Straps, on 382S .....	.10
502	Rod Support for Wire Frame .....	.25
548	Bolt in Wood Handle .....	.02
102-T	Piston Plate, Box .....	8.00
792-S	Plate for Piston Plate .....	2.00
377-S	Wire Frame Lock, Right Hand .....	.10
379-S	Wire Frame Lock, Left Hand .....	.10
378-S	Castings for Centering Box .....	.10
	Butter Box .....	3.50
560	Iron on Butter Box .....	.10
551	Lock on Butter Box .....	.10
552	Springs on Butter Box .....	.05
	1½-oz. Music Wire, Roll of 100 feet .....	2.00
384-S	Rack .....	3.50
558	Key, ¼x¼x1½ inches .....	.10
	Wood Gauge for Bow .....	.25
504	Pin for No. 389-S .....	.05
809-S	Piston Plate, Tub .....	8.00

For Friction Lift (Present) Style Machine

No.	Description.	Price, Each.
386-S	Legs .....	\$0.85
100-T	Plate for Box Handle .....	.35
101-T	Box Handle .....	.15
316-T	Base .....	5.00
317-T	Spider .....	4.50
318-T	Lever for Hoisting Piston (C. I. Part) .....	.75
319-T	Oscillating Link .....	.50
320-T	Lever Bearing .....	.35
321-T	Ratchet for Lever .....	.75
322-T	Piston for Box (enameled) .....	6.00
323-T	Latch on Box Bottom, Right .....	.15
324-T	Latch on Box Bottom, Left .....	.15
325-T	Latch Catch on Box .....	.15
326-T	Cutter Frame for Box .....	5.00
327-T	Cutter Frame for Tub .....	5.00
328-T	Box Guide on Cutter Frame .....	.15
329-T	Box Guide on Base .....	.20
330-T	Lever for Holding Clamping Rods .....	2.00
332-T	Top Dog in Piston .....	1.00
333-T	Bottom Dog in Piston .....	1.00
338-T	Piston for Tub (enameled) .....	6.00
550½	Wood Gauge for Cutting Bow .....	.35
550	Channel Iron in Cutting Bow .....	.75
C-661	Piston Rod (1-inch square) .....	1.50
C-662	Long Push Rod .....	.35
C-663	Short Push Rod .....	.35
C-664	Trip Bolt .....	.10
C-665	Piston in Air Cushion .....	.75
C-666	Casing for Air Cushion .....	.75
C-667	Taper Pin in Piston .....	.15
C-668	Spring for Box Bottom .....	.10
C-669	Uprights for Tub Cutting Frame .....	.25
C-670	Spring in Lever .....	.05
C-671	Rods for Clamping Cutter Frame .....	.50
C-699	Wood Handle .....	\$0.25
C-704	Shaft .....	.35
C-705	Keys, ¼x¼x1½-inch .....	.10
C-707	Short Brace on Tub Frame .....	.15
C-708	Long Brace on Tub Frame .....	.20
C-657	Angles on Box Corners .....	.10
C-658	Short Strap Irons on Box .....	.15
C-659	Long Strap Irons on Box .....	.15
C-710	Sides for Butter Box .....	.25
C-711	Bottom for Butter Box .....	.25
C-712	Cleats for Butter Box .....	.15
C-713	Covers for Butter Box .....	.25
C-714	Corner Covers on Cover .....	.10
C-715	Box Complete .....	3.50
C-716	Stud in Air Cushion .....	.50
C-717	Pin in Air Cushion .....	.10
C-758	1½-oz. Music Wire, per 100 feet .....	2.00
C-779	Stop Stud in Piston .....	.15

# Alpha-Laval "Acme" Belt Separator

## EXTRAS, SUPPLIES, ETC.

All parts sold by us are Genuine De Laval and will fit your machine. See that each part bears the De Laval Trade Mark.

NUMBER OF PART	NAME OF PART	PRICE
3	Guard, for Bowl Spindle.....	\$0 75
4	Screws for Spindle Guard, each.....	15
5	Holding Down (or Lag) Screws for base of frame, each.....	05
7	Cover Arm Nut, separately.....	05
8	Cover Arm Washer, separately.....	05
9	Cover Arm Ring, separately.....	10
28	Sleeve for Bowl Spindle, old style use of indicator.....	75
29	Clamp .....	25
30	Wheel and Post.....	1 50
30d	Post Screw .....	05
41	Set Screw for above Bearing.....	10
45	Spindle Head, old style (not threaded).....	1 25
46	Spindle and Point.....	1 50
54	Upper Bushing, for lower spindle (bronze).....	1 50
55	Lower Bushing, for lower spindle (bronze).....	1 00
56	Steel Points, separately.....	25
58	Tread Wheel Shaft.....	25
59	Step .....	2 00
60	Bottom Screw Nut.....	50
61	Bottom Screw Claw Wrench.....	25
62	Bushing Extractor, complete.....	75
68	Wick Wires (and Wicks), per dozen.....	25
70	Side Oil Cup Feed Screw, separately.....	15
72	Screws for Fastening Brass Oil Cups.....	05
75	Feed Regulating Pin.....	50
76	Feed Pin Ring.....	05
90	Rubber Base Cushions (and Cap), each.....	25
103A	Arm for High Back Lubricator (110) (and Tube) Feeding Top Bearing .....	1 25
103B	Arm for High Back Lubricator (110) (and Tube) Feeding Lower Spindle .....	1 50
108	Front Lubricator Arm (and Tube).....	1 25
110	Sight Feed Cup, complete except arms.....	2 50
152	Cover Arm, complete.....	1 25
155	Faucet .....	2 50
158	Cream Screw, for Bowl.....	15
163	Tubular Shaft .....	4 00
164	Disc Wing (and Rivets).....	60
165	Top Disc .....	60
166	Intermediate Discs .....	50
167	Bowl Ring .....	20
168	Cream Screw Wrench.....	15
169	Tube Cleaner, for bowl tubes.....	15
170	Bowl Top Wrench.....	75
171	Top Bearing (phosphor bronze).....	2 00
172	Top Bearing, second size.....	2 00
173	Top Bearing, third size.....	2 00
174	Rubber Bearing Ring.....	10
175	Top Bearing Plate.....	1 50
176	Bearing Plate Screws, each.....	10
177	Lower Spindle (and Point).....	1 50
178	Spindle Pulley (and pin).....	2 25
179	Taper Pin, separately.....	15

NUMBER OF PART	NAME OF PART	PRICE
180	Steel Points, per dozen.....	\$1 00
180	Steel Point, separately.....	10
181	Bottom Screw Step.....	75
183	Brass Side Oil Cup, old style.....	1 75
184	Brass Top Oil Cup, old style.....	1 25
186	Top (or Regulating) Cover.....	3 50
187	Cream Cover .....	3 00
188	Skim Milk Cover.....	4 00
190	Siphon (for Bowl).....	1 00
191	Bottom Wrench .....	75
192	Tubular Shaft, attached bottom cup style.....	5 00
193	Disc Wing (and rivets).....	50
194	Caulked Disc .....	70
195	Plain Disc .....	60
196	Bottom Disc, Notched for Bowl Ribs.....	70
230	Back Lubricator Arm.....	1 25
288	Clamp Screw .....	10
321	Sleeve Screw, separately.....	05
331	Spindle Head (threaded for speed indicator).....	1 35
345	Nut for Lubricator Arms.....	15
354	Cup Glass, separately.....	75
356	Cup Cork Washer, separately.....	15
358	Sight Feed Piece (and Glass), separately.....	75
359	Small Sight Feed Glass, separately.....	05
360	Set Thread Wheels and Shaft Nos. (57 and 58).....	1 50
378	Bearing Plug, each.....	50
379	Bearing Spring, each.....	25
380	Bearing Set Screw.....	15
392	Bowl Spanner Wrench (two handles).....	1 50
395	Bowl Clamp (for Wrench 392).....	1 75
400	Top Bearing (Radial Spring style).....	7 50
	Exchange of new Bearing complete for worn Bearing complete (expressage to be prepaid on return of old Bearing).....	3 75
418	No. 400 Bearing Body Iron.....	4 00
419	Bearing Plate for No. 400.....	1 25
423	Disc or Binding Screw for No. 400.....	10
424	No. 400 Bearing Bronze.....	2 00
522	Regulating Float .....	75
526	Brush for Cover Spouts.....	15
588	Float .....	75
1000	Top Disc .....	60
1001	Intermediate Disc, plain.....	50
1002	Intermediate Disc, caulked.....	60
1003	Bottom Disc .....	75
1004	Tubular Shaft .....	7 50
1005	Bowl Wrench for Notched Bowl.....	1 50
1007	Locking Bolt and Pin.....	1 35
1008	Spindle Shield .....	75
1010	Regulating Cover, complete after Machine No. 120, 101.....	3 50
1011	Acme Faucet .....	3 00
1017	Tubular Shaft Clamp.....	50
1048	Drip Cup .....	1 00
1074	Syphon .....	75
	Bottom Screw, complete.....	1 25
	Covers, complete set .....	10 00

For extras for Intermediates, both old and new styles, see Intermediates.

## Alpha-Laval "Acme" Turbine Separator

### Extras, Supplies, Etc.

Note.—All extras for Acme Belt Separator excepting Nos. 55, 70, 177, 178, 183, and 184, fit Acme Turbine Separator. Following is a list of parts differing from Acme Belt Separator.

NUMBER OF PART	NAME OF PART	PRICE
113	Cap Screw, for fastening frame sections and motor cap.....	\$0 10
117	Flyer (including Spindle) .....	17 50
118	Flyer Pin, separately .....	10
120	Step Wheel (and Shaft).....	13 00
122	Step Wheel Shaft Bushings, each.....	1 00
123	Set Screw for Shaft Bushings .....	10
124	Brass Oil Cup, for Step and Tread Wheels.....	1 25
125	Wrench, small one (for old style machine).....	50
126	Steam Nozzle .....	3 00
127	Set Screw (and Nut) for Steam Nozzle.....	25
128	Steam Connection Sleeve .....	4 00
129	Wrench, large one (for both styles machine).....	1 00
130	Outside Steam Connections, complete set.....	4 00
131	Steam Gauge Siphon, separately.....	1 35
132	Steam Gauge .....	6 35
133	Pressure Regulator, governing steam pressure .....	12 50
134	Flyer Spindle, separately .....	1 25
135	Flyer Spindle Bushing.....	3 00
139	Steam Wheel .....	20 00
140	Steam Nozzle, for Steam Wheel.....	1 35
142	Exhaust Connection .....	1 00
222	Top Bearing Plate, Spring Style.....	1 25
225	Bearing Set Screws, each.....	15
226	Bearing Plate Screws, each.....	10
227	Lower Spindle (and Point).....	1 50
228	Pet Cock .....	35
229 <sup>1</sup>	Top Bearing (Spring Style), complete.....	4 00
229 <sup>2</sup>	Repair Size, No. 2 Top Bearing.....	4 00
229 <sup>3</sup>	Repair Size, No. 3, Top Bearing.....	4 00
344	Lower Bushing, for steam wheel Spindle.....	1 00
346	Set Screw, for Steam Nozzle.....	15
406	Claw Wrench (for Motor Screws).....	35
1054	Pin for locking Bolt.....	05
	Bottom Screw, complete.....	4 00

## De Laval Alpha Belt-Power Separator

### EXTRA SUPPLIES, ETC.

All parts sold by us are Genuine De Laval and will fit your machine. See that each part bears the De Laval Trade Mark.

### Alpha No. 1 Belt

NUMBER OF PART	NAME OF PART	PRICE
3	Guard, for bowl spindle.....	\$0 75
4	Screws, for spindle guard, each.....	15
5	Holding-Down (or Lag) Screws, for base of frame, each.....	05
6	Cover Arm, complete .....	1 50
7	Cover Arm Nut, separately.....	15
8	Cover Arm Washer, separately.....	5
9	Cover Arm Ring .....	16
10	Faucet .....	4 00

NUMBER OF PART	NAME OF PART	PRICE
13	Cream-Screw, for Bowl.....	\$ 25
19	Tubular Shaft .....	7 50
20	Disc Wing (with rivets).....	75
21	Top Disc .....	60
22	Intermediate Discs, each .....	50
23S	Bowl Ring, small size .....	25
23L	Bowl Ring, large size.....	25
24	Cream-Screw Wrench.....	25
25	Tube Cleaner, for Bowl Tubes.....	25
26	Plain Spanner, top one.....	1 50
27	Siphon, for bowl.....	1 00
28	Sleeve (for bowl spindle), old style, use of indicator.....	75
29	Clamp .....	25
30	Wheel and Post .....	1 50
30D	Post Screw .....	05
31	Ball Bearing, complete.....	7 50
35	Steel Balls, separately, each.....	05
40	Bearing Disc (31, 85 and 88 bearings).....	1 00
41	Bearing Disc Screws, for above, each.....	10
42	Bearing Ring (for Nos. 31 and 85 bearings).....	35
43	Bearing Plate (31, 85 and 88 bearings).....	1 35
44	Bearing Plate Screws (all bearings), each.....	10
45	Spindle Head (plain, old style).....	1 25
46	Lower Spindle (and point).....	1 50
47	Ratchet Pulley, complete, old style.....	3 50
51	Ratchet Pulley Pin .....	15
52	Ratchet Pulley Spring .....	10
54	Upper Bushing (Ph. Bronze).....	1 50
55	Lower Bushing (Ph. Bronze).....	1 00
56	Steel Point, separately .....	25
57	Tread Wheels, each .....	75
58	Tread-Wheel Shaft, separately .....	25
59	Bottom-Screw Step .....	2 00
60	Bottom-Screw Nut .....	50
61	Bottom-Screw Wrench .....	25
62	Bushing Extractor, complete .....	75
	Belt-Tightener (on frame, old style), complete.....	2 50
63	Pulley and Spindle .....	1 50
64	Bracket .....	75
65	Hand Nut .....	35
66	Frame Stud .....	25
67	Leather Washer .....	10
68	Wick Wires (and Wicks), per doz.....	25
69	Brass Side Oil-Cup.....	1 75
70	Side Oil-Cup Feed Screw, separately.....	15
71	Brass Top Oil Cup, old style.....	1 50
72	Oil-Cup Fastening Screws, each.....	05
73	Regulating Float .....	75
74	Top (or Regulating) Cover (2,500 lbs. capacity).....	5 00
75	Cover Regulating Pin .....	50
76	Cover Pin Ring .....	05
77	Cream-Cover .....	3 50
78	Skim-Milk Cover .....	7 50
80	Solid Bronze Bearing, small spindle.....	4 00
80 <sup>a</sup>	Small Solid Bronze Bearing, second size.....	4 00
80 <sup>b</sup>	Small Solid Bronze Bearing, third size.....	4 00
81	Bearing Ring (for No. 80 bearing).....	25
82	Bearing Disc (No. 80 bearing plate).....	1 00
83	Bearing Plate (No. 80 bearing).....	1 25



NUMBER OF PART	NAME OF PART	PRICE
85	Solid Bronze Bearing, large spindle.....	\$4 00
86	Solid Bronze Bearing, second size.....	4 00
87	Solid Bronze Bearing, third size.....	4 00
88	Sectional Bearing (with ring).....	5 00
88 <sup>2</sup>	Sectional Bearing, second size (with ring).....	5 00
88 <sup>3</sup>	Sectional Bearing, third size (with ring).....	5 00
89	Bearing Ring, for sectional bearing.....	35
90	Rubber Base Cushions (and Cap), each.....	25
103a	High Back Bracket (and tube) feeding top bearing.....	1 25
103b	High Back Bracket (and tube) feeding lower spindle.....	1 50
104	Lubricator Cup, complete, for high back brackets.....	2 50
108	Front Lubricator Arm (and tube).....	1 25
109	Side Lubricator Arm (and tube).....	1 25
110	Sight-Feed Cup, complete, except arm.....	2 50
178	Spindle Pulley (and pin).....	2 25
179	Pulley Pin, separately.....	15
288	Clamp Screw.....	10
311	Tubular Shaft (without attached bottom cup).....	5 00
312	Tubular Shaft Disc Wing (and Rivets), for No. 311 Shaft.....	75
313	Top Disc, with indentations.....	75
314	Intermediate Discs, with indentations, each.....	60
316	Disc Wing and Rivets.....	75
319	Plain Spanner, bottom one.....	1 60
320	Regulating Pin Bracket.....	10
321	Sleeve Screw, separately.....	05
325	Bottom Enclosed Disc, indented disc style of bowl without ribs.....	1 50
331	Spindle Head (threaded for speed-indicator).....	1 35
337	Clamp, or Bottom Wrench, new style.....	1 75
339	Spanner, or Handle Wrench, new style.....	2 00
343	Plain Top Spanner, for notched bowl-top.....	1 50
345	Nut for Lubricator Arms.....	15
347	Tubular Shaft Disc Wing (and Rivets), for No. 374 Shaft.....	75
353	Top (or Regulating) Cover (2,000 lbs. capacity).....	5 00
354	Cup (110) Glass, separately.....	75
355	Cup (104) Glass, separately.....	75
356	Cup Cork-Washer (104 and 110 cups), separately.....	15
357	Sight-Feed Piece (and glass), (104 cup), separately.....	75
358	Sight-Feed Piece (and glass), (110 cup), separately.....	75
359	Small Sight-Feed Glass (104 and 110 cups), separately.....	05
360	Set Tread Wheels and Shaft.....	1 50
362	Top Disc, plain for stripped disc bowl.....	75
363	Intermediate Discs, with long strips, each.....	60
364	Bottom Enclosed Disc (old style shaft bowl), with strips.....	1 50
366	Vertical Ribs, for bowl sides.....	25
367	Bottom Enclosed Disc, indented disc style of bowl, with outside ribs.....	1 50
374	Tubular Shaft (with attached bottom cup).....	7 50
375	Bottom Disc (shaft-attached-cup style of bowl), with long strips.....	75
376	Top Bearing, radial spring, complete with plate.....	15 00
376 <sup>2</sup>	Top Bearing, No. 2 repair size.....	15 00
376 <sup>3</sup>	Top Bearing, No. 3 repair size.....	15 00
377	Bearing (Brass).....	5 00
378	Bearing Plug.....	50
379	Bearing Spring.....	25
380	Bearing Screw.....	15
381	Bearing Plate.....	4 00

NUMBER OF PART	NAME OF PART	PRICE
	Exchange for New Bearing complete for worn Bearing complete (expressage to be prepaid, on return of old Bearing) .....	\$7 50
382	Top Bearing, plate separately .....	1 25
383	Brass Screws for Top Bearing 376, beginning with machine 150,926 .....	10
399	Clamp for Tubular Shaft .....	50
401	Bottom Disc, plain, for calked or indented discs .....	75
410	Intermediate Disc .....	60
412	Intermediate Discs, with short strips, each .....	60
413	Bottom Disc (shaft-attached-cup style of bowl), with short strips .....	75
414	Disc Strips, short size, each .....	05
415	Intermediate Disc, with strips calked on .....	60
416	Intermediate Disc, plain .....	60
1048	Oil Catcher .....	1 00
1052	Bowl Wrench .....	1 75
1053	Bowl Locking Bolt .....	1 65
1054	Bowl Locking Pin .....	10
1057	Spindle Shield .....	75
	Bowl Plates or Discs, 3,000 lbs. and 3,500 lbs. capacity:	
1058	Top Disc .....	75
1059	Intermediate Disc, plain .....	60
1060	Intermediate Disc, calked .....	75
1061	Bottom Disc .....	1 00
1062	Tubular Shaft, 3,000 lbs. and 3,500 lbs. capacity .....	12 50
1066	Top (or Regulating) Cover, (3,000 lbs. and 3,500 lbs. capacity) ..	5 00
	Covers, complete set .....	15 00
	Speed-indicator, complete .....	2 00
	Bottom-Screw, complete .....	4 00
	Disc Strips, long size, each .....	05

### Intermediate—New Style

5	Holding-Down (or Lag) Screws, each .....	05
272	Bronze Bushing, driving fit .....	1 25
273	Tightener Arm and Spindle .....	2 50
274	Tightener Pulley .....	2 00
275	Tension Pulley Spindle .....	15
276	Spring Cotter .....	05
277	Large Rope Wheel .....	5 00
278	Shaft .....	2 50
279	Rope Wheel Key .....	10
280	Tight Belt Pulley .....	2 50
281	Tight Belt Pulley Screw, separately .....	10
282	Loose Belt Pulley .....	2 50
283	Shaft Collar .....	75
284	Shaft Collar Screw, separately .....	10
285	Belt-Shifter Bracket .....	1 25
286	Bracket Screw .....	10
288	Belt-Shifter Screw .....	10
291	Tight Belt Pulley Screw Wrench .....	25
292	Bronze Bushing, loose fit .....	1 25
294	Belt-Shifter Arm (and rods) .....	1 00
308	Key for Pulley .....	25
479	Set Screw, for loose bushing .....	10

### Intermediate—Old Style

5	Holding-Down (or Lag) Screws, each .....	05
61	Hook Wrench, for threaded shaft collar .....	25
113	Bearing Cap Screws, each .....	15

NUMBER OF PART	NAME OF PART	PRICE
277	Large Rope Wheel.....	\$7 50
279	Rope Wheel Key .....	10
297	Bearing Cap .....	1 25
298	Shaft .....	5 00
299	Shaft Collar .....	50
300	Shaft Collar Pin.....	10
301	Flat Belt Pulley .....	5 00
302	Friction Leather .....	75
303	Friction Cone .....	2 00
304	Threaded Shaft Collar, each.....	75
305	Spring .....	25
306	Clutch Fork .....	1 25
307	Clutch Hand Nut.....	50

## Alpha No. 2 Belt and Turbine

Parts Differing from Alpha No. 1 only

92	Faucet .....	\$ 5 00
95	Tubular Shaft, 3,500 lbs. capacity bowl.....	10 00
96	Disc Wing (and rivets).....	75
97	Brass Top Oil-Cup, old style.....	1 50
98	Top (or Regulating) Cover (4,000 lbs. capacity).....	5 00
99	Ph. Bronze Top Bearing (1891 and 1892 machines).....	4 00
100	Bearing Ring, for 99 bearing only.....	30
101	Bearing Plate, for 99 bearing only.....	1 35
102	Bearing Disc, for 99 bearing only.....	1 00
105	Second (or Repair) size of such bearing.....	4 00
106	Third (or Repair) size of such bearing.....	4 00
269	Disc Wing (and rivets).....	75
315	Tubular Shaft, 4,000 lbs. capacity bowl.....	7 50
316	Disc Wing (and rivets) for No. 315 Shaft.....	75
361	Top (or Regulating) Cover, (3,500 lbs. capacity).....	5 00
425	Tubular Shaft, with attached bottom cup.....	10 00
426	Vertical Ribs on inside of bowl.....	50
1064	Tubular Shaft, 4,500 lbs. capacity.....	15 00
1065	Top (or Regulating) Cover, (4,500 lbs. capacity).....	5 00

## De Laval Alpha Turbine Separator

Extras, Supplies, Etc.

Note.—All extras for Alpha Nos. 1 and 2 Belt excepting Nos. 45 to 67 inclusive and Nos. 178, 179 and 360 fit Nos. 1 and 2 Turbine. Following is list of parts differing from Belt separator parts.

NUMBER OF PART	NAME OF PART	PRICE
124	Brass Oil Cup, for motor parts.....	\$ 1 25
130	Steam Connection, outside piping, complete set.....	4 00
131	Steam Gauge Siphon, separately.....	1 35
132	Steam Gauge (and Siphon).....	6 35
133	Pressure Regulator, governing steam pressure.....	12 50
142	Exhaust Connection .....	1 00
1049	Oil Siphon for Bottom Screw.....	75
	Bowl Plates, or Discs, 3,000 lbs. capacity:	
1058	Top Disc .....	75
1059	Intermediate Disc, plain.....	60
1060	Intermediate Disc, caulked .....	75

NUMBER OF PART	NAME OF PART	PRICE
1061	Bottom Disc .....	\$1 00
1062	Tubular Shaft, latest improvement .....	12 00
1066	Top (or Regulating) Cover, (3,000 lbs. capacity) .....	5 00
	Covers, complete set .....	15 00
	Speed Indicator, complete .....	2 00
	Exchange of new Bearing complete for worn Bearing complete (expressage to be prepaid, on return of old bearing) .....	7 50

### Steam-Wheel Motor Parts differing from Steam-Flyer Motor Parts

54	Upper Bushing .....	1 50
56	Steel Point, separately .....	25
60	Bottom-Screw Nut .....	50
61	Bottom-Screw Hook Wrench .....	25
62	Bushing Extractor, complete .....	75
113	Cap Screw, for Motor Cap, each .....	10
140	Steam-Nozzle .....	1 35
344	Lower Bushing .....	1 00
348	Bottom Screw Step .....	2 00
350	Tread-Wheel Shaft, separately .....	35
351	Set Tread Wheels and Shaft .....	1 50
385	Steam-Wheel (with spindle, etc.) complete .....	21 50
386	Steam-Wheel, separately .....	20 00
387	Steam-Wheel Sleeve Bushing .....	1 00
388	Steam-Wheel Collar .....	50
389	Steam-Wheel Set Screw .....	10
390	Steam-Wheel Spindle (and point) .....	1 50
406	Claw Wrench, for cap screws .....	35
411	Steam-Wheel Collar Hook Wrench .....	35
577	Steam-Nozzle Set Screw .....	15
864	Spindle Head .....	1 35
	Bottom-Screw, complete, including tread-wheels .....	4 00

### Steam-Flyer Motor Parts differing from Steam-Wheel Motor Parts

45	Spindle Head (without speed indicator threads) .....	1 25
113	Cap Screws, for fastening frame sections .....	10
114	Spindle Head (for No. 115 short spindle) .....	1 25
115	Flyer Spindle, short style .....	1 25
116	Flyer Spindle Bushing, short style .....	3 00
117	Steam-Flyer (including spindle) .....	17 50
118	Flyer Pin, separately .....	10
120-121	Step Wheel (and Shaft) .....	13 00
122	Step Wheel Shaft Bushings, each .....	1 00
123	Set Screw for Shaft Bushings .....	10
125	Wrench, small one .....	50
126	Steam Nozzle .....	3 00
127	Set Screw (and nut) for Steam Nozzle .....	25
128	Steam Connection Sleeve .....	4 00
129	Wrench, large one .....	1 00
134	Flyer-Spindle, separately .....	1 25
135	Flyer Spindle Bushing .....	3 00
149	Flyer (including spindle), old style, short spindle .....	17 50
864	Spindle Head (threaded for speed indicator) .....	1 35

# Babcock Tester Extras

## Wizard Tester

### 24, 32 and 40 Bottle, 6 and 9 inch

No.	Description.	Price.	No.	Description.	Price.
303X	Base 24 Bottle 6 in. Tube....	\$4.00	828X	Spindle .....	\$1.25
304X	Top 24 Bottle 6 in. Tube....	4.00	829X	Upper Bushing .....	.50
343X	Head 24 Bottle 9 in. Tube....	4.50		Lower Bushing, same as Up-	
344X	Head 24 Bottle 6 in. Tube....	4.00		per Bushing .....	.50
341X	Head 40 Bottle 9 in. Tube....	5.00	830X	Steel Ball .....	.10
342X	Head 32 Bottle 6 and 9 in.		831X	Steel Ball Discs.....	.10
	Tube .....	4.50	832X	Brake .....	.50
289X	Base for 24-32 and 40 Bottle		833X	Brake Screw .....	.15
	9 in. Tube.....	6.00	834X	Steam Nozzle and	
287X	Top for 24-32 and 40 Bottle		835X	Set Screw, complete.....	1.50
	9 in. Tube.....	6.00	836X	Cups, per pair.....	.50
353X	Turbine Cover .....	1.50	837X	Steam Gauge .....	3.00
354X	Turbine .....	3.00	838X	Steam Valves .....	.80
374X	Damper .....	.25	839X	Siphon .....	.50
286X	Base 32 and 40 Bottle 6 in.		840X	Outlet Cock .....	.25
	Tube .....	5.00	841X	Pinch Cock .....	.10
288X	Top 32 and 40 Bottle 6 in.		842X	Glass Dropper for Hose.....	.10
	Tube .....	5.00	843X	Door Lifter .....	.25
292X	Door .....	.75	844X	Water Fount, complete.....	1.50
827X	Lock Nut for Bottom Plug....	.10		Bottle Filling Hose.....	.10

## 20th Century Tester

### 24 Bottle

Case .....	\$7.00	Horizontal Shaft for Top Gears....	\$0.50
Door .....	.75	Gear Frame .....	1.50
Bottom Plug .....	.40	Spur Pinion .....	.75
Lock Nut .....	.10	Spur Gear .....	2.00
Steel Ball .....	.10	Spur Gear Shaft .....	.35
Steel Ball Discs.....each,	.10	Spur Gear Case.....	.50
Spindle .....	1.25	Cups.....per pair,	.50
Bottle Carrier .....	4.00	Crank .....	.40
Spiral Pinion on Spindle.....	1.00	Crank Handle .....	.05
Spiral Gear .....	1.75	Crank Handle Bolt.....	.05
Spiral Gear Case.....	.50	Set Screws .....	each, .05

### 6 and 8 Bottle

Case .....	\$3.50	Spur Pinion .....	\$0.75
Door .....	.50	Spur Gear .....	1.00
Steel Ball .....	.05	Spur Gear Shaft.....	.25
Spindle with Spiral Thread.....	1.00	Spur Gear Case.....	.40
Bottle Carrier .....	2.50	Crank .....	.40
Spiral Gear .....	1.00	Crank Handle .....	.05
Spiral Gear Case.....	.35	Crank Handle Bolt.....	.05
Horizontal Shaft for Top Gears....	.35	Cups .....	per pair, .50
Gear Frame .....	1.00	Set Screws .....	each, .05

### 10 and 12 Bottle

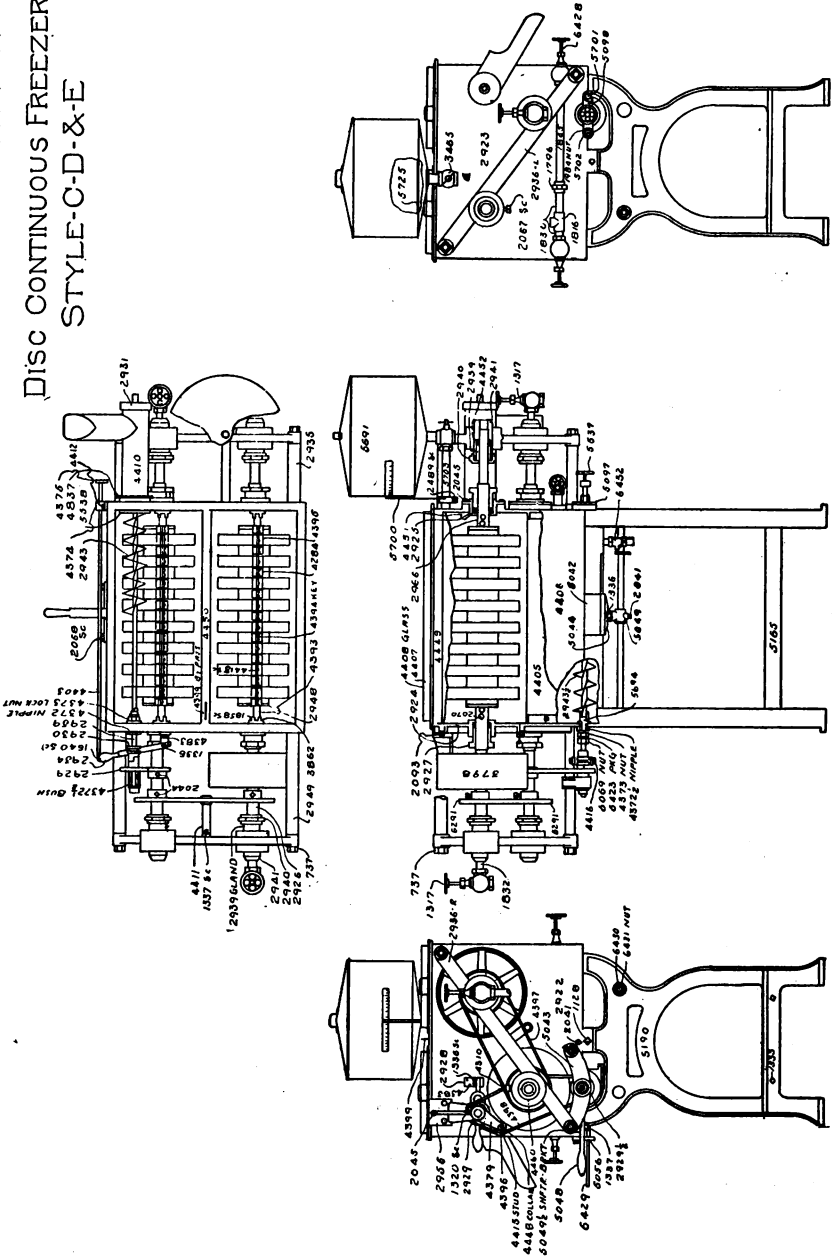
Case .....	\$5.00	Spur Pinion .....	\$0.75
Door .....	.50	Spur Gear .....	1.00
Steel Ball .....	.05	Spur Gear Shaft.....	.25
Spindle with Spiral Thread.....	1.00	Spur Gear Case.....	.40
Bottle Carrier .....	3.00	Crank .....	.40
Spiral Gear .....	1.00	Handle .....	.05
Spiral Gear Case.....	.35	Bolt .....	.05
Horizontal Shaft for Top Gears....	.35	Cups .....	per pair, .50
Gear Frame .....	1.25	Set Screws .....	each, .05

## Official Tester

### 2 and 4 Bottle

Body .....	\$1.00	Shaft .....	\$0.25
2 Bottle Head.....	.50	Ball .....	.10
4 Bottle Head.....	.75	Spindle .....	1.00
Cap .....	.25	Thumb Screw .....	.10
Crank .....	.25	Spiral .....	1.50

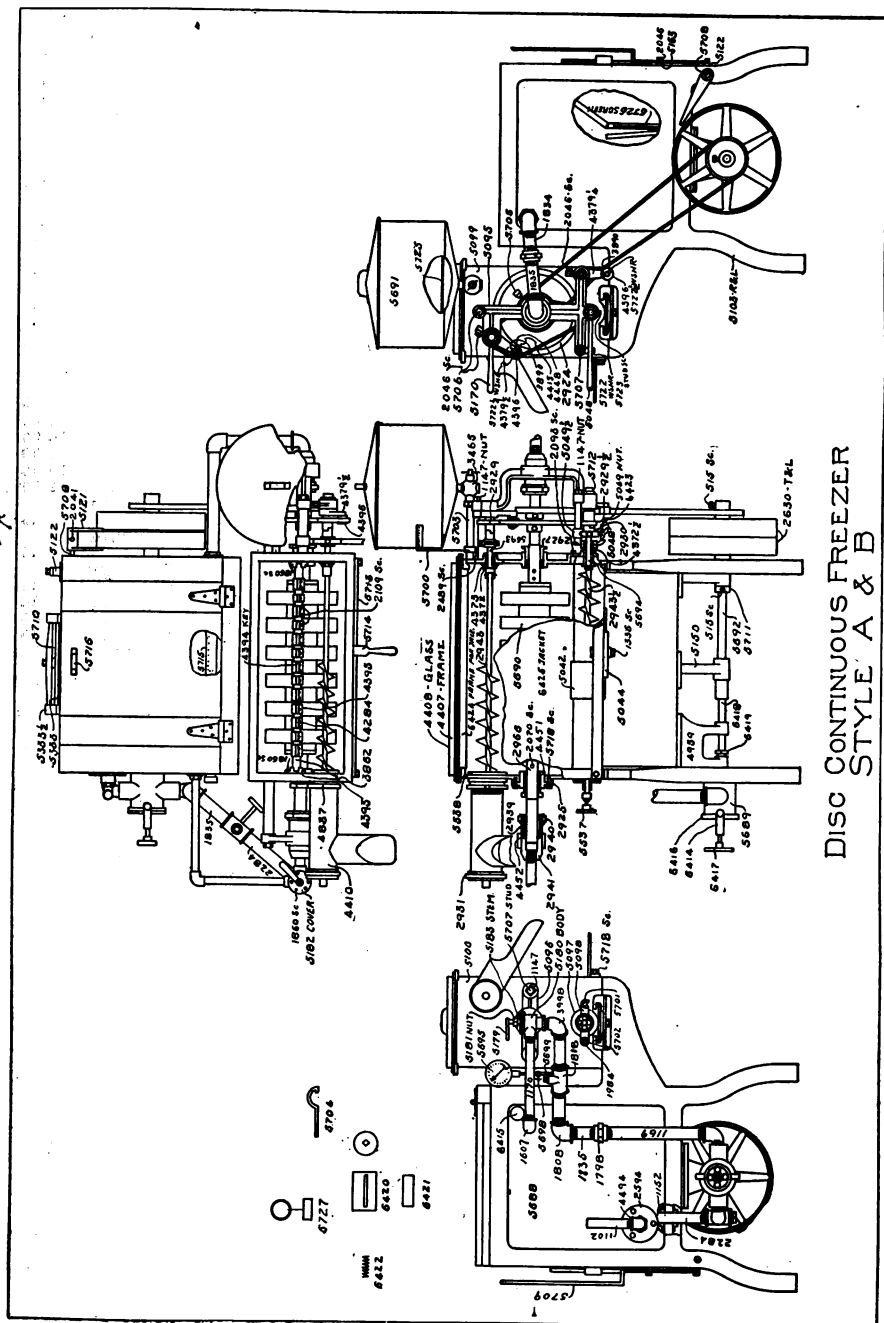
DISC CONTINUOUS FREEZER  
STYLE-C-D-&-E



# Disc Ice Cream Freezer

## Extra Parts for C, D and E Sizes

No.	Name of Part	Price, Each	No.	Name of Part	Price, Each
737	¾" Hex. Nut on No. 2949 and No. 2935, takes 4...	.20	4372½	Clutch Bracket Bushing...	2.00
1128	½"x1¼" Hex. Head Cap Screw	.10	4373	Worm Shaft Bushing Nut	1.75
1317	¾" Angle Valve	2.20	4374	Clutch Shifter Rod Bracket	1.00
1320	5/16x1" Hex. Head Cap Screw	.05	4375	Clutch Shifter Rod Knob	1.00
1333	½"x1" Hex. Head Cap Screw	.10	4379	Conveyor Chain Idler Bracket	2.00
1336	¾"x1¼" Hex. Head Cap Screw	.05	4383	5/16"x½" Hex. Head Cap Screw, takes 2	.05
1337	¾"x1½" Hex. Head Screw	.05	4384	Steam Jet	1.00
1640	No. 14—20"x1" "Machine"	.05	4393	Finger Bar, takes 2	8.50
1796	½" Union	.40	4394	...C 6.50 D 7.50 E	.40
1816	½" Tee	.20	4395	Finger Bar Key, takes 2	.40
1830	½" Nipple (Short)	.05	4395½	Deflector, Lower Compartment	.40
1832	¾"x2" Nipple, takes 3	.05	4396	Deflector, Upper Compartment	.40
1845	½" Pipe	.15	4397	Idler Roll, takes 2	.60
1984	5/16 Hex. Nut	.05	4398	Drive Chain... See Drive Conveyor Chain List	
2041	¾"x¾" Set Screw	.05	4399	By Pass Gate	1.00
2044	¾"x¾" Headless Set Screw	.05	4402	¼"x¼" Key for Sprocket, takes 3	.25
2045	¾"x¾" Hex. Head Cap Screw	.05	4403	Clutch Shifter Rod	1.00
2067	5/16"x1" Hex. Head Cap Screw, takes 4	.05	4407	Cover Frame, takes 2	10.00
2068	5/16"x¾" Hex. Head Cap Screw, takes 3	.05	4408	Cover Glass, takes 2	1.00
2070	¼"x¼" Headless Set Screw, takes 8	.05	4410	Conveyor Tube	10.00
2093	¼"x¾" Headless Set Screw, takes 16	.05	4411	Drive Chain Idler Bracket	2.00
2489	¼"x½" Set Screw, takes 3	.05	4412	No. 14—20"x¼" Machine Screw on 4401	.05
2922	Front End Head	70.00	4413	No. 14—20"x½" Machine Screw on 4284	.05
2923	Rear End Head	80.00	4414	5/16"x1½" Hex. Head Cap Screw on No. 4411	.05
2924	Large Flange, takes 2	18.00	4415	Idler Stud	.25
2925	Small Flange, takes 2	6.00	4416	Shoulder Screw, takes 2	.05
2927	Bearing Stuffing Nut, takes 4	3.00	4443	Idler Collar, takes 2	.20
2928	Clutch Shifter Bracket	1.00	4451	Bearing Packing, takes 4	.20
2929	Worm Sprocket (Upper)	3.00	4452	Inlet Packing, takes 4	.20
2929½	Worm Sprocket (Lower)	3.00	4460	Conveyor Drive Sprocket	3.25
2930	Conveyor Clutch	1.00	4837	Outside Locknut—Conveyor Tube	2.50
2931	Conveyor Tube Cap	3.00	5042	Lower Outlet	22.00
2934	Upper Shifter Lever	3.00	5043	Lower Conveyor Support	2.00
2935	Inlet Support Stud—Short, takes 2	1.50	5044	Outlet Slide	4.50
2935½	Lower Conveyor Support Stud	1.50	5048	Lower Clutch Shifter	1.75
2936	Inlet Support—R. & L., takes 2	3.50	5049	Outlet Lever Bracket	.75
2939	Inlet Support Box Gland, takes 4	.50	5049½	Lower Clutch Shifter Bracket	1.00
2940	Inlet Support Box Nut—R. & L., takes 4	1.75	5056	Outlet Lever Stop	2.50
2941	Inlet Support Box—R. & L., takes 4	5.00	5069	Lower Worm Packing Nut	.85
2943	Upper Conveyor... C 10.00 D 11.00 E 12.00		5097	Lever Conveyor Bearing Shaft Cap	2.75
2943½	Lower Conveyor... C 11.00 D 12.50 E 14.00		5098	Lever Conveyor Yoke	1.25
2948	Central Tube Collar, takes 2	3.00	5190	Legs, takes 2	10.00
2949	Inlet Support Stud—Long, takes 2	1.75	5537	Hand Wheel	.50
2955	Worm Bracket	4.00	5538	Inside Locknut for Conveyor Tube	1.00
2959	Upper Worm Shaft Stud	2.50	5691	Feed Tank with Valve and Hood	10.00
2966	Bearing Bushing, takes 4	2.00	5694	Lower Conveyor Shaft	2.00
3465	Feed Valve Body Casting	4.50	5700	Indicator for Feed Tank	.50
3798	Pulley	5.00	5701	Solid Stud for Bearing Cap	.20
3862	Finger Bar Bracket, takes 4	1.25	5702	Stud with Nut for Bearing Cap	.35
3890	13/32" Cotter Pin, takes 2	.05	5703	Pipe for Feed Tank	1.00
4132	By Pass Casting	12.00	5725	Screen for Feed Tank	.75
4284	Finger, Lower Compartment	1.00	6291	Main Sprocket 23 tooth	10.00
4284½	Finger, Upper Compartment	1.00	6423	Conveyor Shaft Packing, takes 2	.10
4310	Empress Grease Cup, takes 4	.75	6428	¾" Angle Valve	1.60
4372	Worm Shaft Bushing	2.00	6429	Bottom Outlet Valve Lever	2.00
			6430	Stretcher	2.00
			6431	Stretcher Rod Nuts, 1", takes 2	.20
			5690	Coils, takes 2	
				...C 145.00 D 180.00 E 235.00	
			5165	Stretcher	
				...C 7.50 D 8.50 E 9.50	
			5704	Wrench	1.00





# Disc Ice Cream Freezer

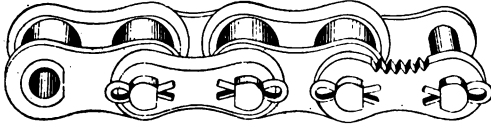
Extra Parts for "A," "AA," "B" and "BB" Sizes

No.	Name of Part	Price, Each	No.	Name of Part	Price, Each
1152	1" Locknut .....	.10	5122	Shifter Rod Casting.....	.50
1336	$\frac{3}{8}$ "x1 $\frac{1}{4}$ " Cap Screws, takes 2 .....	.25	5150	Pump Jack .....	8.00
1860	12—24x $\frac{1}{2}$ " Machine Screw .....	.30	5163	Shifter Boss .....	.35
2041	$\frac{3}{8}$ "x $\frac{3}{4}$ " Set Screw.....	.05	5170	Upper Conveyor Clutch Shifter .....	1.75
2045	$\frac{3}{8}$ "x $\frac{3}{4}$ " Cap Screw, takes 4 .....	.05	5179	Valve Lever .....	.75
2046	$\frac{3}{8}$ "x1" Cap Screw, takes 10 .....	.05	5180	Special Three Way Valve..	5.75
2070	$\frac{1}{4}$ "x $\frac{1}{4}$ " Set Screws, takes 4 .....	.05	5181	Valve Packing Nut.....	.80
2093	$\frac{1}{4}$ "x $\frac{1}{4}$ " Cap Screw, takes 8 .....	.05	5182	Valve Cover .....	2.50
2489	$\frac{1}{4}$ "x $\frac{1}{4}$ " Set Screw, takes 4 .....	.05	5183	Valve Stem .....	2.75
2594	Overflow Flange .....	.75	5333	Ring Casting for Brine Box	.80
2630	Pulley—T. & L., takes 2... ..	3.00	5333 $\frac{1}{2}$	Ears for Brine Box, takes 2	.30
2924	Large Bearing Flange....	18.00	5537	Screw with Hand Wheel..	.60
2925	Small Bearing Flange....	6.00	5538	Inside Locknut for Spout..	1.00
2927	Stuffing Nut for Large End Bearing .....	3.00	5689	Pump Cylinder Case.....	6.00
2927 $\frac{1}{2}$	L. H. Stuffing Nut for Large End Bearing.....	3.00	5690	Coil, complete with Shaft .....	A \$145.00 B 235.00
2929	Sprocket on Upper Conveyor Shaft .....	3.00	5691	Feed Tank, complete with Valve and Hood.....	10.00
2929 $\frac{1}{2}$	Sprocket on Lower Conveyor Shaft .....	3.00	5692	Countershaft .....	1.75
2930	Clutch for Conveyor Shaft, takes 2 .....	1.00	5693	Upper Conveyor Shaft....	2.00
2931	Cap for Spout.....	3.00	5694	Lower Conveyor Shaft....	2.00
2939	Inlet Support Box Gland, takes 2 .....	.50	5695	Pressure Gauge .....	2.50
2940	Stuffing Nut for R. H. Box	1.75	5696	Main Drive Chain... See Drive	
2940 $\frac{1}{2}$	Stuffing Nut for L. H. Box	1.75	5697	Conveyor Drive Chain/Chain List	
2941	End Box for Coil—1" Thread .....	5.00	5698	Female Air Cock.....	.50
2941 $\frac{1}{2}$	End Box for Coil— $\frac{3}{4}$ " Thread .....	5.00	5700	Indicator for Feed Tank..	.50
2943	Upper Conveyor, A \$10.00 B	12.00	5701	Solid Stud for Bearing Cap	.20
2943 $\frac{1}{2}$	Lower Conveyor, A 11.00 B	14.00	5702	Stud with Nut for Bearing Cap .....	.35
2966	Bearing Sleeve, takes 2... ..	2.00	5703	Pipe for Feed Tank.....	1.00
3465	Valve for Feed Tank.....	4.50	5704	Spanner Wrench .....	1.40
3862	Bracket for Finger Bar, takes 2 .....	1.25	5705	Oil Cups, takes 2 .....	.75
3890	$\frac{3}{32}$ " Cotter Pin.....	.05	5706	Upper Stud for 3 Arm Yoke	.60
4284	Fingers, A takes 9; B takes 15 .....	1.00	5707	Lower Stud for 3 and 2 Arm Yoke, takes 4.....	.60
4373	Locknut for Upper and Lower Boxes, takes 2..	1.75	5708	Shifter Rod .....	.25
4379 $\frac{1}{4}$	Lower Idler Bracket.....	2.00	5709	Shifter Handle .....	.35
4379 $\frac{1}{2}$	Upper Idler Bracket.....	2.00	5710	Cover for Side Opening on Tank .....	1.00
4393	Finger Bar.... A \$6.50 B	8.50	5712	Collar for Conveyor Shaft, takes 2 .....	.40
4394	Finger Bar Key.....	.40	5713	Outlet Valve Slide Bar...	.80
4395	Deflector, A takes 8; B takes 14 .....	.40	5714	Handle for Outlet Valve..	2.00
4396	Roller for Idler, takes 2... ..	.60	5715	Overflow Spray Pipe.....	1.25
4407	Cover Frame .....	10.00	5716	Handle for Brine Box Cover	.10
4408	Cover Glass .....	1.00	5717	1 $\frac{1}{2}$ "x $\frac{1}{4}$ " Step Bolts, takes 2	.20
4410	Spout .....	10.00	5718	$\frac{3}{8}$ "x $\frac{5}{8}$ " Cap Screws, takes 12 .....	.05
4415	Idler Stud .....	.25	5719	$\frac{3}{8}$ "x $\frac{1}{4}$ " Headless Set Screws, takes 3.....	.05
4448	Idler Collar .....	.20	5720	3/16"x $\frac{1}{4}$ " Stove Bolts, takes 6 .....	.05
4451	Bearing Packing .....	.20	5722	Idler Washer .....	.10
4452	Inlet Packing .....	.20	5722 $\frac{1}{2}$	Washer for Clutch Shifter	.10
4460	Small Sprocket on Coil... ..	3.25	5723	Special 5/16" Screw for Shifter, takes 4.....	.20
4837	Outside Locknut for Spout	2.50	5724	Thermometer .....	2.50
4872	Upper Box for Conveyor Shaft .....	1.00	5725	Screen for Feed Tank....	1.50
4872 $\frac{1}{2}$	Lower Box for Conveyor Shaft .....	1.25	5726	Screen for Brine Tank....	4.00
4959	Pump Base .....	6.75	5727	Stop Cap for Conveyor Tube .....	1.25
5042	Bottom Outlet Casting....	22.00	6414	Pump Yoke .....	1.50
5044	Outlet Cover .....	4.50	6416	Pump Cylinder Head....	2.00
5048	Lower Clutch Handle.....	1.75	6417	Hand Wheel & Screw for Pump .....	.75
5049 $\frac{1}{2}$	Bracket for 5048.....	.75	6418	Pump Shaft .....	3.50
5069	Stuffing Nut for Lower Box	.85	6419	Pump Packing Nut.....	1.45
5095	3 Arm Yoke.....	3.00	6420	Pump Cam Head.....	5.00
5096	2 Arm Yoke.....	.60	6421	Cams for Pump, per set..	2.00
5097	Lower Conveyor or Bearing Cap .....	2.75	6422	Pump Cam Spring.....	.10
5098	Arm for Bearing Cap.....	1.25	6423	Conveyor Shaft Packing... ..	.10
6121	Shifter Fork .....	.50	6289	Upper Drive Sprocket....	4.00
			6290	Lower Drive Sprocket (Roller Chain) .....	5.50

## Drive Chain

In connection with the various machines we use drive chain of several styles and weights, varying according to the duty. The following illustrations and lists cover the regular chains used, which are priced at so much per foot. Please note the repair links furnished for the different styles. The foot price does not include repair links. All chains are one inch pitch. To ascertain price of roller chain of any length, subtract 2 inches from total length, multiply by price per foot, and add price of roller link and repair link. For block chain, subtract 1 inch from total length and add price of one complete link.

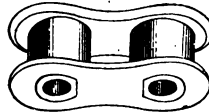
### Style W Steel Roller Chain



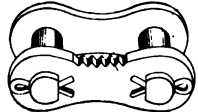
Used for drive of Victor Heavy Duty Chain Drive Churn. Designated as No. 641½ on churn repair list.

Price of complete chain for churn .....\$14.50

Pitch	Width of Roll	Diam. of Roll	Price per Foot	Price Roller Link	Price Patch Link
1"	¾"	⅝"	\$1.80	\$0.40	\$0.30



Roller Link.



Patch Link.

### Style E Steel Roller Chain



Used for drive on Victor Chain Drive Churn. Designated on churn repair list as No. 641.

Pitch	Width of Roll	Diam. of Roll	Price per Foot	Price Roller Link	Price Patch Link
1"	¾"	⅝"	\$1.50	\$0.30	\$0.20

Price of complete chain for churn .....\$12.00



Patch Link.



Roller Link.

### Style B Steel Roller Chain

See Illustration of Style E

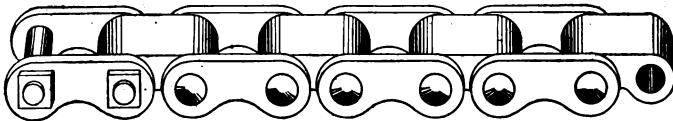
Our Number	Pitch	Width of Roll	Diameter of Rolls	Price per Foot	Price Roller Link	Price Patch Link
B1	¾"	¾"	11"	\$1.00	\$0.15	\$0.15
B2	¾"	½"	11"	1.10	.20	.20

The ¾ inch wide is used for ice cream freezers (except conveyor drive chain), Wizard agitator and all pump drives and motor drives.

The ½ inch wide is used for ice cream can washers, sterilizers, brush washers, Farrington pasteurizers, etc.

**Note**—In ordering style B chain, give our number and total net length, including connecting link.

### Style D Steel Block Chain



Used for Driving Freezer Conveyor.

Pitch	Width of Block	Price per Foot	Price Block	Price Bolt and Nut Connecting Link
1"	1"	\$0.55	\$0.05	\$0.10

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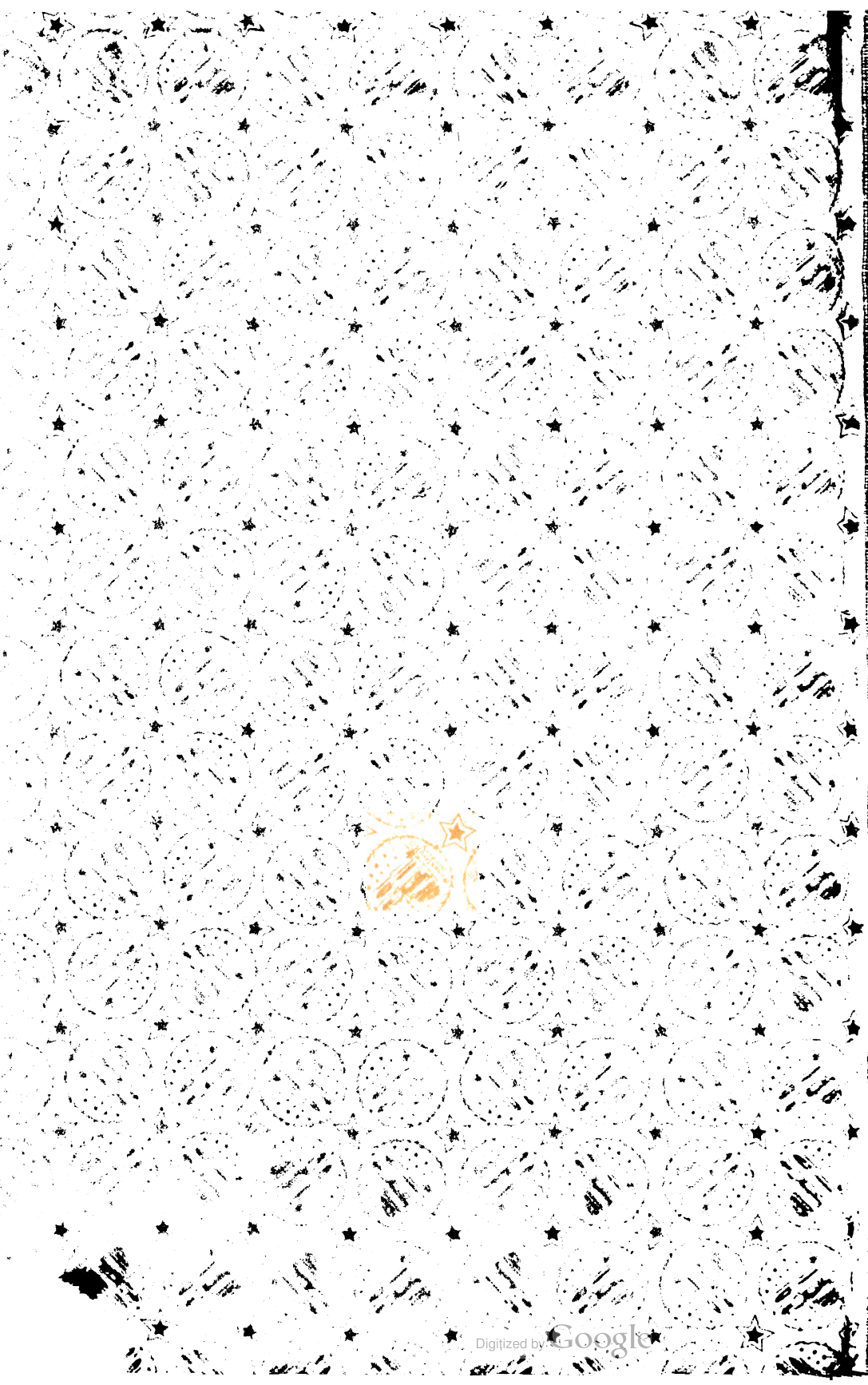




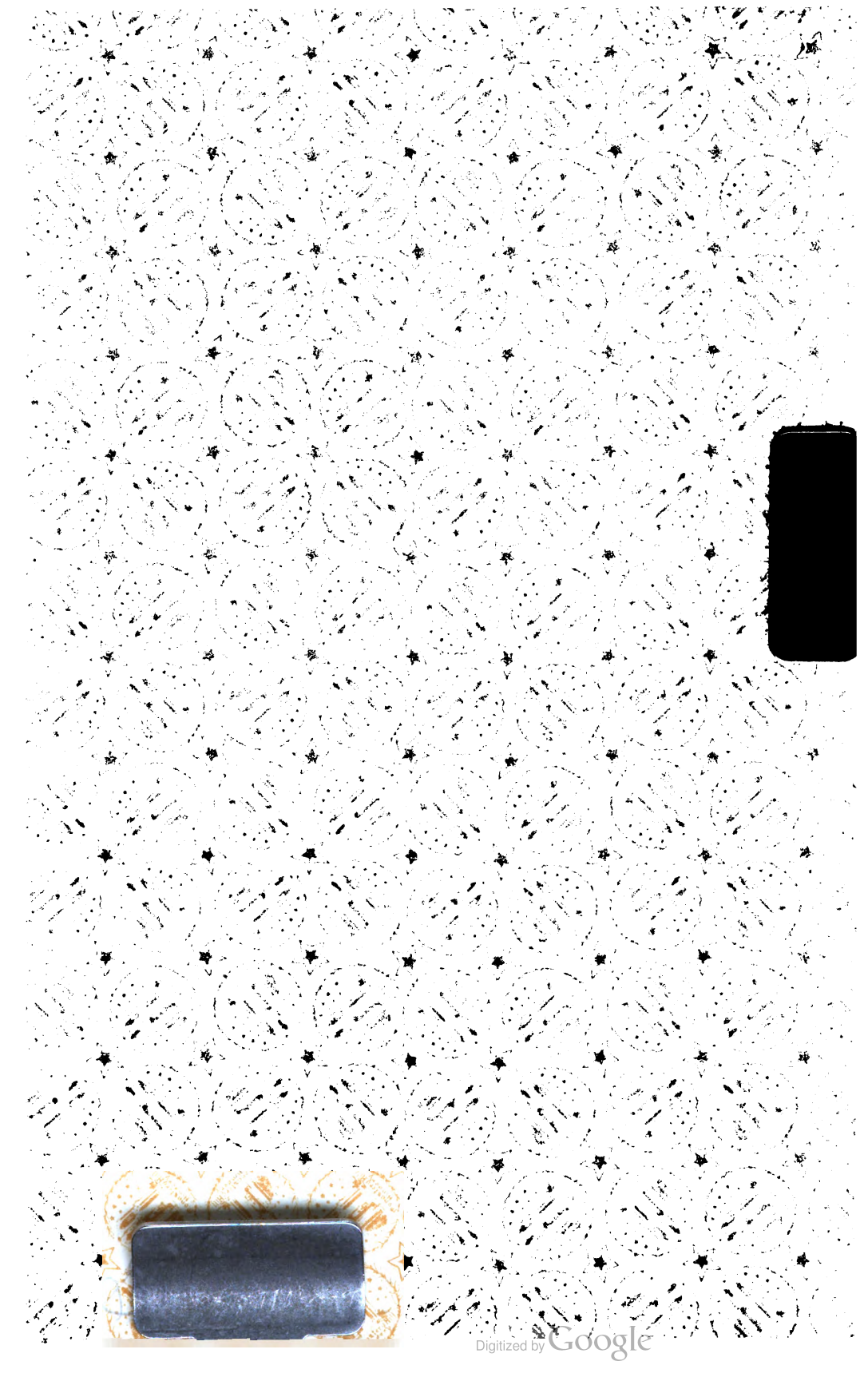












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